NORTH/SOUTH CLINTON AVENUE
ST. PAUL STREET/SOUTH AVENUE
TWO-WAY CONVERSION STUDY

FINAL
FUTURE CONDITION
TRAFFIC FORECASTING REPORT

Prepared for:

City of Rochester
30 Church Street
Rochester, New York 14614

JANUARY 2012

Prepared by:

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1.0 INTRODUCTION

Laberge Group has been retained by the City of Rochester to investigate the feasibility of converting the North/South Clinton Avenue and the St. Paul Street/South Avenue corridors from one-way to two-way traffic operations. This "Two-Way Conversion Study" will:

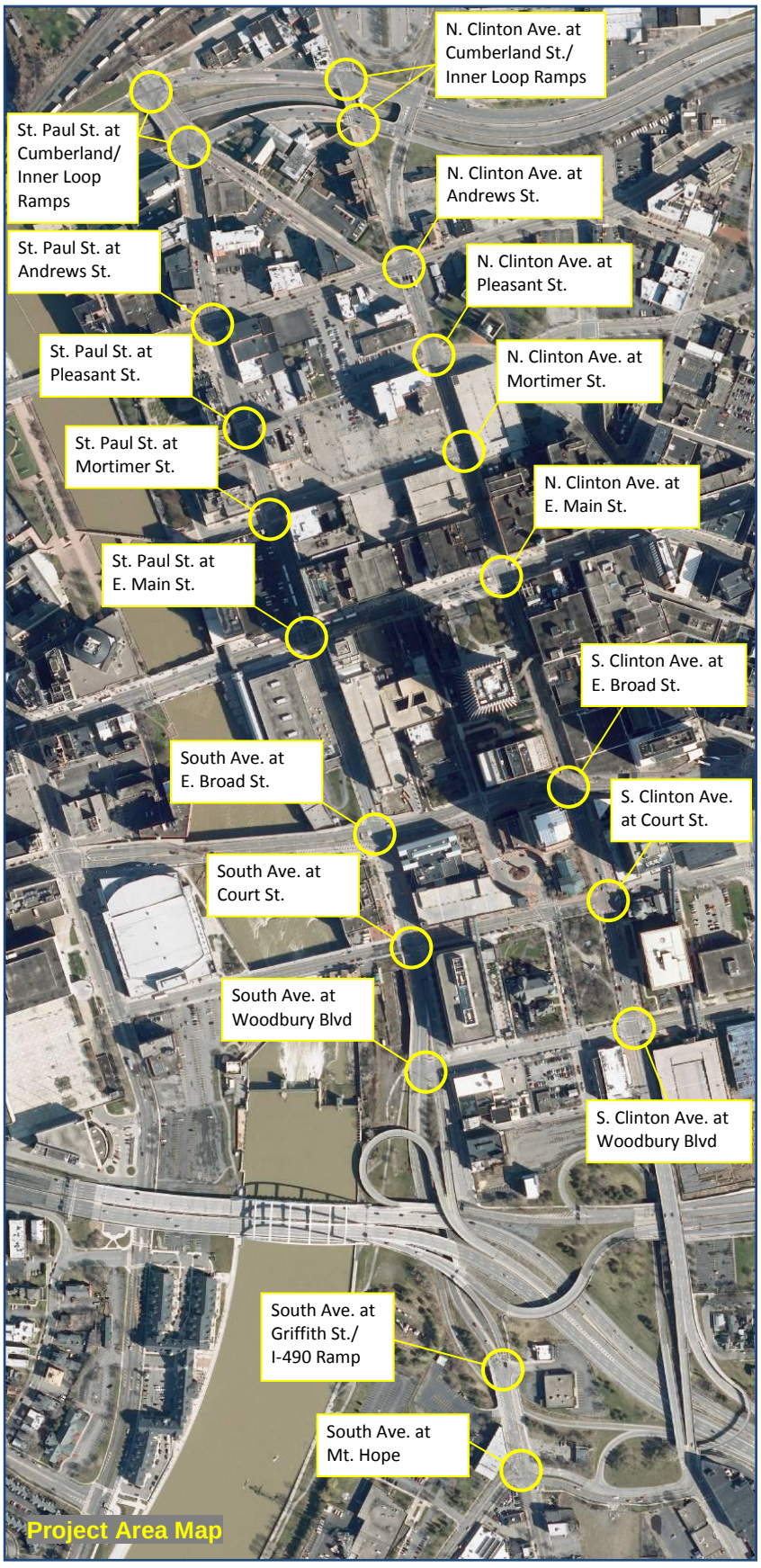
- Document existing conditions with regard to traffic operations, pedestrian and bicycle traffic, transit, safety and parking.
- Review future anticipated developments within the City and forecast one-way and two-way future peak hour traffic volumes that could result from those developments.
- Summarize the operational analysis and anticipated levels of service resulting from two-way conversion, providing information of pedestrian, bicycle and transit, as well as vehicular operations, and assessing the effect on parking and safety.
- List recommendations and requirements necessary, as well as potential impediments, to the conversion.

The complete Two-Way Conversion Study will be comprised of three separate, but integrated reports:

- **Existing Conditions Analysis Report** – data and analysis summarizing current conditions was reviewed by the Project Advisory Committee (PAC) and was accepted by the City in July 2011.
- **Traffic Forecasting Report** – The below summary of the anticipated future peak hour traffic volumes, after two-way conversion, and the methodology used to derive them.
- **Feasibility Assessment Report** – analysis of future conditions and recommendations related to the two-way conversion. The Feasibility Assessment Report itself will be a two step process with a draft report, approved by the PAC, being submitted and presented in a public forum to solicit comments before the final report is issued.

The information presented below represents the second report in the series and details the future traffic forecasts.

Overall the study is limited to 20 intersections along Clinton Avenue and St. Paul Street/South Avenue between Byron Street and Cumberland Street in downtown Rochester. The intersections included in the study area are depicted in the project area map shown on the next page. Other intersections were reviewed as part of this study to help develop traffic data, but they were not specifically analyzed as part of this study. They include Clinton Ave. and Byron St., whose existing traffic volumes were reviewed to help determine northbound diversions for the two-way traffic condition; and Joseph Ave. at the Cumberland St./Inner Loop Intersections, who were included in the signal analysis for Clinton Ave. at Cumberland St./Inner Loop, as all four intersections operate off the same signal controller.


N. Clinton Ave. at Cumberland St./ Inner Loop Ramps
St. Paul St. at Cumberland/ Inner Loop Ramps
N. Clinton Ave. at Andrews St.
St. Paul St. at Andrews St.
N. Clinton Ave. at Pleasant St.
St. Paul St. at Pleasant St.
N. Clinton Ave. at Mortimer St.
St. Paul St. at Mortimer St.
N. Clinton Ave. at E. Main St.
St. Paul St. at E. Main St.
S. Clinton Ave. at E. Broad St.
South Ave. at E. Broad St.
S. Clinton Ave. at Court St.
South Ave. at Court St.
South Ave. at Woodbury Blvd
S. Clinton Ave. at Woodbury Blvd
South Ave. at Griffith St./ I-490 Ramp
South Ave. at Mt. Hope
Project Area Map

2.0 FUTURE NO-BUILD TRAFFIC

To develop traffic forecasts for the two-way conversion scenario, the future traffic for the current geometry and traffic control (no-build condition) must first be estimated. To do this, a three step process was utilized. First, 2011 peak hour traffic volumes were redistributed to account for known geometric changes that will occur in the near future. Next, a background growth rate was applied to approximate future traffic volume growth resulting from regional development. For this study, the background growth applied represents a 20 year design horizon. Finally, trip generation from known major developments within the study area were added to the existing traffic volumes. Combined, these adjustments create the estimated future no-build traffic.

2.1 Existing Traffic Volumes

The 2011 Existing Peak Hour Traffic Volumes were developed as part of the *Existing Conditions Analysis Report*. These volumes for the AM peak hour are shown on Figure A1 in Appendix A. For the PM peak hour, they are shown on Figure B1 in Appendix B, and for pedestrian traffic the existing peak hour volumes are shown on Figure E1 in Appendix E.

2.2 Traffic Redistribution Resulting from Near-Term Geometric Changes

Two significant developments are being planned in the study area within the next few years that would result in road geometry changes; the Midtown Redevelopment, currently under construction; and the RTS Transit Center, planned for 2013. There is also the possibility of a hotel development on the corner of East Main Street and Stone Street, which proposes Stone Street to be converted to two-way traffic, but since that development is only conceptual at this point and no specific project is currently being progressed, it was not included in this study. In addition, there is also the potential for the Broad Street Aqueduct project to move forward, which would bring additional geometric changes, but given the uncertainty of this project and the probable timeframe if constructed, the adjustments resulting from this development were handled as a separate alternative, which will be discussed later in this report.

With regards to the Midtown Redevelopment, the most significant geometric change is the conversion of East Broad Street between Stone Street and South Clinton Avenue to two-way traffic. The Final Design Report issued for the Midtown Redevelopment outlined the necessary traffic adjustments for this conversion. Information from that report was used as a basis for the traffic redistribution used in this report.

In addition, the RTS Transit Center will change the traffic flow pattern within the study area as well. This development proposes to convert Mortimer Street to one-way eastbound operation, and to add site driveways between Mortimer Street and Pleasant Street along both North Clinton Avenue and St. Paul Street. It also proposes to remove turn restrictions along East Main Street at both the Clinton Avenue and St. Paul/South Avenue intersections and re-designate the current “through only” lanes on East Main Street to “through/left” lanes at those intersections and re-designate the current bus lanes at those intersections as “through/right” lanes. For these geometric changes, existing traffic flow patterns were reviewed and existing turn movements were reassigned to achieve a logical progression of traffic while maintaining traffic volumes outside the affected area.

Figures A2 and B2 depict the traffic redistribution resulting from these geometric changes for the AM and PM peak hours respectively.

2.3 Background Growth

It is typical for a roadway improvement project to be designed to accommodate traffic over a 20 year design horizon, so the future traffic volumes developed for this study will be adjusted to account for regional traffic growth over the next 20 years. Based on historic data, as well as forecasted growth projections obtained from the Genesee Transportation Council (GTC), a 0.2% annual growth is a reasonable assumption for growth within the study area, outside of any known localized development. Over a 20 year period, this represents a 4% total growth. Thus, existing traffic volumes were increased by 4% to account for background growth. Figures A3 and B3 depict the additional trips applied to the existing traffic volumes to account for background growth during the AM and PM peak hours respectively.

2.4 Known Future Developments

Two significant developments are imminent within the project area within the next few years. These developments include the Midtown Redevelopment, currently under construction, and the RTS Transit Center, which is planned for construction within the next 2-3 years. As these projects are major traffic generators within the project area, their trips will result in localized traffic volume changes that couldn't be effectively represented by application of a general background growth rate. As a result the trips from these developments were estimated and applied to the existing volumes separately as described below.

2.4.1 RTS Transit Center

The Rochester Genesee Regional Transportation Authority (RGRTA) has proposed a new Regional Transit Service hub in downtown Rochester, commonly referred to as the RTS Transit Center. This Transit Center is scheduled for construction in 2012-2013 and will serve as a central transfer point for most of the regional transit routes within the City. It will eliminate the need for bus to bus transfers along the local roads and will reduce the need for several existing bus stops, most notably along East Main Street, which currently hosts the existing Central Information Shelter and several stops that act as transfer points.

To determine the trips generated by this development, projected Transit Center bay assignment and turn information was obtained from RGRTA and pedestrian traffic forecasts were obtained from Kimley-Horn and Associates, who performed some of the detailed analysis for the project. From this data and a review of the existing transit routes, the projected traffic changes were developed. The trips shown for this project are strictly bus trips, as the passenger car generation from this development is considered negligible. Figure A4 in Appendix A shows the bus diversions and additions estimated for the AM peak hour and Figure B4 in Appendix B shows the estimated diversions and additions for the PM peak hour.

2.4.2 Midtown Redevelopment

This development has been analyzed and approved through past studies. To determine the conditions and traffic resulting from this development, the initial Traffic Assessment developed by Fisher Associates in 2008 for the Draft Generic Environmental Impact Statement (DGEIS) was first reviewed, but updated trip generation and distribution information found in the Final Design Report for the Midtown Redevelopment project developed by Labella Associates in 2011 was selected as the best data to use as a basis. Trip generation and distribution from that report was used to the fullest extent possible, but as their report did not include the entire study area, trips at locations not covered in that study had to be extrapolated. This was done by reviewing existing traffic patterns and distributing trips accordingly. The trip generation data for the Midtown Development is depicted on Figure A5 in Appendix A for the AM peak hour and on Figure B5 in Appendix B for the PM peak hour.

2.5 Future No-Build Traffic Volumes

Combining the traffic volumes shown on Figure A1 with the additions and subtractions shown on Figures A2 thru A5 results in the Future No-Build Traffic Volumes for the AM peak hour shown on Figure A6 in Appendix A. Similarly, the data on Figures B1 thru B5 were combines to determine the Future No-Build Traffic Volumes for the PM peak hour shown on Figure B6 in Appendix B.

The future no-build traffic volumes represent traffic conditions 20 years in the future if the two-way conversion of North/South Clinton Avenue and St. Paul Street/South Avenue does not occur. These volumes serve as the basis for the traffic diversions assigned for the two-way conversion forecasts.

3.0 FUTURE TWO-WAY CONVERSION TRAFFIC

Forecasting the traffic diversions for the two-way conversion required many factors to be considered and several assumptions to be made. Ideally traffic would be split 50% along each corridor in each direction, but when you look at the inlets and outlets to the system and where vehicles need to go, this isn't always be possible. Some of the strategies used to make reassignment decisions included:

- Inflow traffic north and south were equalized to the greatest extent possible, but were limited by where traffic originated and the roads used to get there. For example, traffic entering the City from I-490 westbound has a direct ramp to Clinton Avenue and no direct access to South Avenue, so northbound traffic entering the study area would be naturally skewed to Clinton Avenue. It is assumed that some of that traffic will divert along Woodbury Blvd to South Avenue to avoid the heavier northbound traffic along Clinton Avenue, but because any alternate route to South Avenue outside the study area would be much longer and more time consuming, it is unlikely that vehicles would divert before reaching the study area
- Outflow traffic north and south were equalized to the greatest extend possible, but were also limited by where traffic would be destined and the roads required to get there. Examples of this include:
    - I-490 eastbound has a direct access ramp off of South Avenue and access via Clinton Avenue would require traffic to travel a longer route down to Byron Street before accessing another ramp there. As a result, it was assumed that traffic in the study area would predominantly

want to access I-490 eastbound from South Avenue and would tend to travel down Clinton Avenue to access from Byron Street only when congestion and delay on South Avenue increased to an unacceptable level. The forecasts reflect this heavier inclination to the South Avenue Ramp.

  - Joseph Avenue has a direct access connection to Clinton Avenue. Traffic bound to northeastern Rochester has no direct route to that area from St. Paul Street, so this traffic would continue to use Joseph Avenue, which would skew northbound traffic at Andrews Street to be naturally higher along Clinton Avenue than along St. Paul Street.
  - Traffic along Bittner Street, which provides Clinton Avenue traffic easy access to St. Paul Street heading northbound, gives a great indication of the magnitude of traffic heading to destinations outside the study area via St. Paul Street. These volumes were used as a basis for determining the number of northbound diversions exiting the system in the forecasts.

- Traffic in and out of the study area along side road access points were kept consistent with no-build conditions.
- Turn movement volumes were determined based on existing turn percentages, assumed destinations (parking garages, etc.) and the logical movements drivers would make to generally minimize travel time and delay.
- The conversion to two-way traffic requires certain geometric changes that were considered in the traffic assignments. Most notably, use of the left side ramp to I-490 eastbound at the South Avenue and Woodbury Blvd intersection must be discontinued, so traffic destined for that ramp needed to be shifted to the right side ramp or to the Byron Street ramp.

It should be noted that the traffic forecasts presented in this report are a starting point for analysis and will need to be adjusted during the feasibility analysis to account for various geometric alternatives and diversions that would result from trying to avoid localized congestion.

A discussion of each peak hour and the specifics concerning the forecast for each are included below:

3.1 AM Peak Hour Traffic for Two-Way Conversion

Traffic entering the study area northbound included traffic from I-490 and traffic from the local roads south of the study area. Unfortunately for equalizing traffic, over 60% of the inbound traffic from that direction is from the I-490 ramp, which will not redirect to St. Paul Street/South Avenue outside of the study area because of the length of diversion required. Some of this traffic (approximately 10%) was diverted to South Avenue via Woodbury Blvd and Main Street, but given that much of the northbound traffic is destined for parking garages adjacent to Clinton Avenue, it is unlikely that more than that would divert. For these diversions to South Avenue, Woodbury Blvd is the most likely location for vehicles to divert (turn left), being that it is the first available release point from the heavier northbound traffic along Clinton Avenue. East Main Street was selected as a secondary release point, as opposed to East Broad Street and Court Street, because the lower left turn volume at East Main Street would be more enticing for diverting vehicles than the much heavier left turn volumes at the other intersections. For the northbound traffic entering from the local roads, nearly 750 vehicles were shifted to South Avenue, this represents almost all traffic northbound at the Mount Hope intersection and over half the trips northbound along

Clinton Avenue at Byron Street. It was felt that this heavy percentage of diversions would occur to avoid the heavier congestion caused by the over 1,800 vehicles entering from the I-490 eastbound off-ramp at Clinton Avenue.

For traffic entering the study area from the north, traffic was adjusted such that southbound through traffic at Andrews Street was generally equalized between the two corridors with 435 vehicles being diverted to Clinton Avenue and 465 vehicles going through on St. Paul Street.

Traffic exiting the study area was generally equalized between the two roadways as well. For traffic heading south, 260 vehicles were diverted to Clinton Avenue and 232 vehicles remained on South Avenue heading from Woodbury Blvd to Byron Street. Heading north, 170 vehicles were redistributed to St. Paul Street and 185 vehicles remained on Clinton Avenue traveling northbound at the Inner Loop Eastbound ramp intersections. It should be noted that northbound through traffic along Clinton Avenue at Andrews Street is not balanced with the northbound traffic along St. Paul Street at Andrews Street. This is because approximately half of the northbound traffic at this location is destined for Joseph Avenue, and given traffic origins within the study area, very little of that traffic would reasonably divert to St. Paul Street.

Turn movements within the study area were developed by determining if traffic was bound for a destination within the study area (i.e. parking garages) or outside along one of the side streets, and assigning turn movements to approximate the same number of arrivals at each assumed destination based on the percentage of traffic along each roadway and the likelihood of diversion based on logical driver decision-making. Traffic flow and congestion was considered in the decision making process, realizing that drivers would avoid turn movements that already saw significant traffic. Generally, trips were assigned to locations where vehicles would see the least resistance, but without diverting from a logical path to their destination. For the AM peak hour it is assumed that most traffic was destined for the major parking garages and that little traffic exited these garages during this period.

The Traffic Redistribution developed for the Future Two-Way Conversion AM Peak Hour is detailed on Figure A7 and the forecasted AM Peak Hour Traffic Volumes for the Two-Way Conversion are shown on Figure A8. Both figures can be found in Appendix A.

3.2 PM Peak Hour Traffic for Two-Way Conversion

In the PM peak hour a much lower percentage of northbound traffic enter the city via I-490 westbound allowing for a much more even distribution of northbound traffic than in the AM peak hour. As a result, northbound traffic entering the study area is fairly balanced with 55% along Clinton Avenue and 45% along South Avenue. Leaving the study area to the north using traffic volume information from Bittner Street to determine the number of diversions, traffic is also reasonable balanced with 380 vehicles along Clinton Avenue and 400 vehicles along St. Paul Street traveling northbound at the Inner Loop Eastbound intersection. Similar to the AM peak, northbound traffic at Andrews Street appears much more skewed to Clinton Avenue, but again, that is a result of over 400 vehicles traveling to Joseph Avenue, most from the downtown parking areas where the most direct and logical route would be up Clinton Avenue.

Southbound traffic in the PM peak hour is fairly balanced at the northern and southern termini of the project. At the north side, there are 342 southbound through vehicles on St. Paul Street at Andrews Street and 285 southbound through vehicles on North Clinton Avenue at Andrews Street. Where traffic leaves the system to the south, there are 237 through vehicles on South Avenue and 655 through vehicles on South Clinton Street heading to Byron Street. The 655 vehicles on South Clinton Avenue include 255 "through" vehicles at Byron Street, which is fairly balanced with what would remain on South Avenue, and 400 vehicles that will utilize the Byron Street entrance ramp onto I-490 eastbound. It is assumed that these vehicles would divert from South Avenue and Woodbury Blvd because of the potential congestion caused if the over 1,000 vehicles wanting to access I-490 eastbound had to utilize that single ramp.

Turning traffic was distributed similar to the AM peak hour, but with the assumption that the parking garages will have mostly outbound traffic and little inbound.

The Traffic Redistribution developed for the Future Two-Way Conversion PM Peak Hour is detailed on Figure B7 and the forecasted PM Peak Hour Traffic Volumes for the Two-Way Conversion are shown on Figure B8. Both figures can be found in Appendix B.

3.3 Two-Way Conversion Pedestrian Traffic

As the conversion to two-way traffic will change little with regard to pedestrians, the only significant change in pedestrian traffic and distribution will be the addition of the RTS Transit Center. This development will not only shift a large portion of the pedestrians crossing Clinton Avenue and St. Paul Street from East Main Street to Mortimer Street, but will also increase the number of pedestrian in the localized area because the ease of transit realized will promote more use of mass transit. However, it is assumed that this increase in pedestrian traffic would only occur within the first two blocks from the transit center and that pedestrian volumes outside that area would remain as existing.

To determine the probable changes in pedestrian traffic, information developed by Kimley-Horn and Associates for the RTS Transit Center was reviewed. The number of transit riders in the current pedestrian mix was estimated, and the number of additional pedestrian trips was projected. In addition, the locations of current transit transfers were reviewed and the number of pedestrian trips shifted to other locations was estimated. Based on these potential pedestrian traffic shifts the future pedestrian traffic for two-way traffic conditions was calculated.

Also considered in the pedestrian forecasts was the need to accommodate SUNY Brockport students crossing St. Paul Street at the Transit Center. Pedestrian crossing numbers were obtained from the City and added to the forecasts to account for this.

Appendix E includes all the pedestrian figures for the AM and PM peak hours. Figure E1 depicts the Future No-Build Pedestrian Traffic, Figure E2 depicts the Pedestrian Traffic Redistribution and Figure E3 shows the Future Pedestrian Traffic under Two-Way Conversion Conditions.

4.0 ALTERNATE 1 TRAFFIC VOLUMES

A second future build alternative was also developed. This alternative, referred to as "Alternate 1", projects future traffic volumes with all the conditions described above, but with the addition of geometric changes and traffic generation resulting from the Broad Street Aqueduct Project. The basis of the diversions and redistribution used for Alternate 1 is the *Broad Street Aqueduct Traffic Impact Study* developed by T.Y. Lin International in 2009.

The process to develop the Two-Way Conversion Traffic Volumes for Alternate 1 includes redistributing future no-build traffic to account for the removal of the Broad Street bridge, then assign new trips generated by the Broad Street Aqueduct Project to develop the Alternate 1 Future No-Build Traffic Volumes. These volumes were then used as a base for the future two-way conversion traffic redistribution for Alternate 1. For this alternative, most of the traffic redistribution will be the same as discussed above in Section 3.0, except in the area localize to Broad Street and its adjacent intersections, where traffic was redistributed to avoid the Broad Street bridge similar to how the Alternate 1 No-Build volumes were developed.

Based on the data from the *Broad Street Aqueduct Traffic Impact Study*, if the Broad Street bridge were removed, the following redistribution would occur:

Westbound traffic:

- 5% redistributed to cross at Andrews Street in the AM Peak Hour (0% in the PM Peak Hour)
- 10% redistributed to cross at Main Street in the AM Peak Hour (15% in the PM Peak Hour)
- 65% redistributed to cross at Court Street in both the AM and PM Peak Hours
- 20% diverted to cross outside the Study Area in both the AM and PM Peak Hours
    - In the PM Peak Hour, 5% of the westbound diversions will leave study area via Clinton Avenue northbound, other diversions occur outside the immediate study area.

Eastbound Traffic:

- 5% redistributed to cross at Andrews Street in both the AM and PM Peak Hours
- 65% redistributed to cross at Main Street in both the AM and PM Peak Hours
- 10% redistributed to cross at Court Street in both the AM and PM Peak Hours
- 20% diverted to cross outside the Study Area in both the AM and PM Peak Hours
    - In the AM Peak Hour 15% of the eastbound diversions will enter the study area via the north side of St. Paul Street, 5% go elsewhere.

Using the distribution percentages above as a guideline, the traffic redistribution for the Broad Street closure under future no-build conditions is shown in Figures C1 and D1 (AM and PM Peak Hours respectively). Figures C2 and D2 show the Trip Generation resulting from the Broad Street Aqueduct Project assuming a 100% Development Distribution as presented in the Traffic Impact Study for that project, and Figures C3 and D3 depict the Alternate 1 Future No-Build Peak Hour Traffic Volumes.

Figures C4 and D4 shown the Alternate 1 Traffic Redistribution that would result from two-way conversion for the AM and PM Peak Hours respectively, and Figures C5 and D5 combine the previous figures to yield the Alternate 1 Future Two-Way Conversion Peak Hour Traffic Volumes. Figures C1-C5 can be found in Appendix C of this report and Figures D1-D5 in Appendix D.

5.0 SUMMARY AND CONCLUSIONS

This report discusses the methodology used to develop the traffic forecasts for the Future Two-Way Conversion condition. It contains figures that outline each step of the process for both the main alternative and Alternate 1, which assumes the addition of the Broad Street Aqueduct Project. The traffic volume data contained in this report will be used as a basis for all future condition analyses and feasible alternative recommendations, which will be presented in the next report developed for this study. The following point should be noted concerning this Forecasting Report:

- Future No-Build Traffic Volumes were developed by adding and subtracting trips resulting from proposed developmental geometric changes; background traffic growth; and trip generation from known developments within the study area. The known developments include the Midtown Redevelopment and the RTS Transit Center.
- Future Build Traffic Volumes resulting from a conversion to two-way traffic along both North/South Clinton Avenue and St. Paul Street/South Avenue were developed by attempting to balance northbound and southbound traffic entering the study area between the two corridors and by ensuring side street volumes in and out of the study area were consistent with no-build conditions.
- Though northbound and southbound traffic are reasonably balanced between the two corridors at the local roadway entry and exit points, the location of Interstate ramps and the inability of both corridors to provide equally easy access, cause a significant skew in traffic between the two corridors at times. Most notably, the I-490 off-ramp skews northbound traffic to be much heavier on Clinton Avenue in the AM peak hour and the I-490 on-ramps skew southbound traffic to be higher along St. Paul/South Avenue in the PM peak hour. In addition, the positioning of Joseph Avenue and the heavy flow of traffic to that roadway skews northbound traffic at Andrews Street to be heavier at Clinton Avenue in both peaks.
- Pedestrian traffic was redistributed near the Main Street and Mortimer Street intersections to account for the RTS Transit Center and the removal of bus stops within the area, and the additional crossings expected for SUNY Brockport students. Other pedestrian changes are not expected as conversion to two-way traffic should not affect pedestrian routes.
- Alternate 1 trip distribution and traffic forecast development were based on geometric and traffic conditions resulting from the Broad Street Aqueduct Project being added to the future condition.

The *Two-Way Conversion Feasibility Analysis Report* will proceed once the forecasted traffic volumes outlined in this report have been accepted by the City.

Appendix A

AM Peak Hour Traffic Volume Diagrams

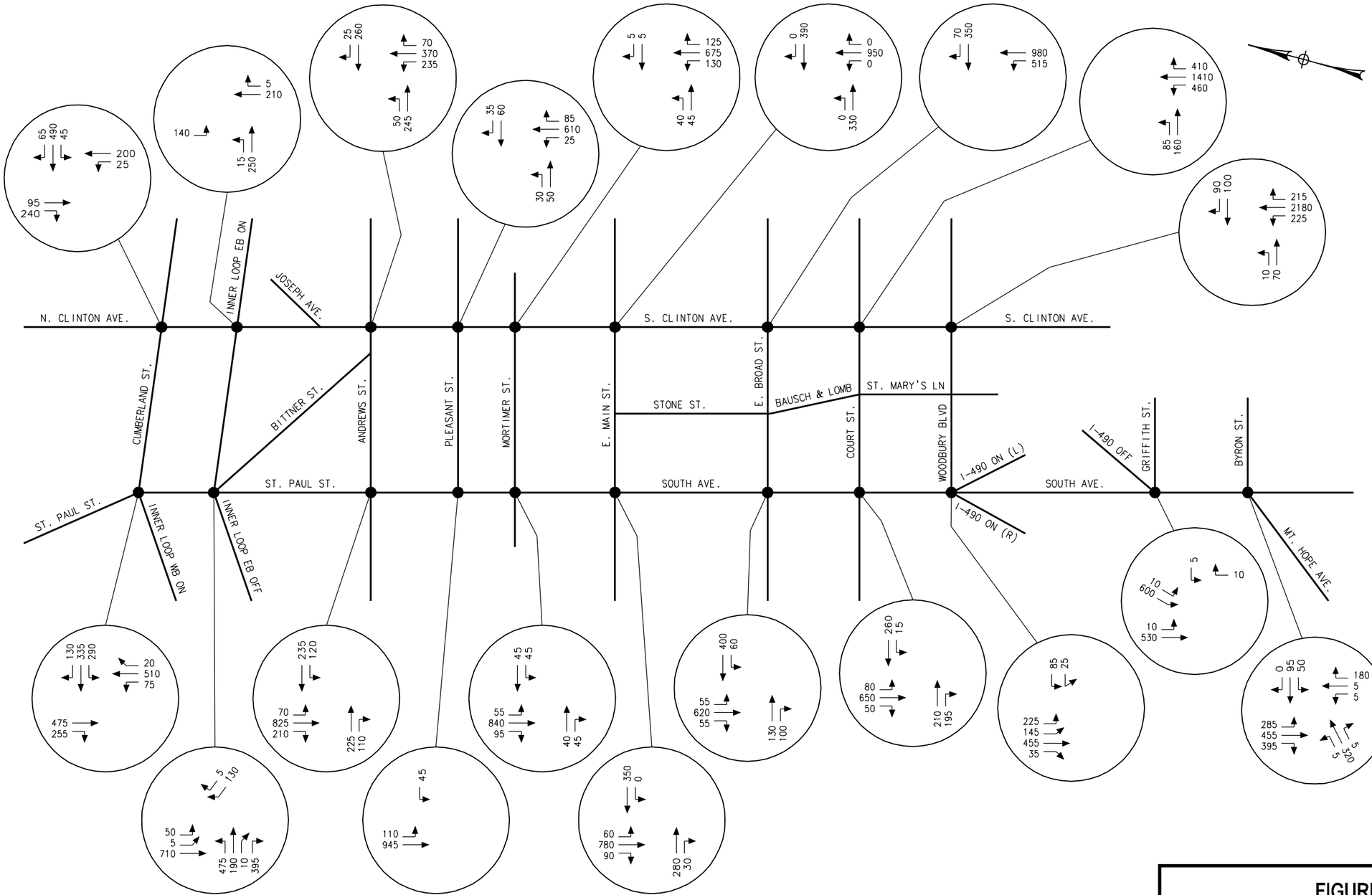


FIGURE A1

2011 AM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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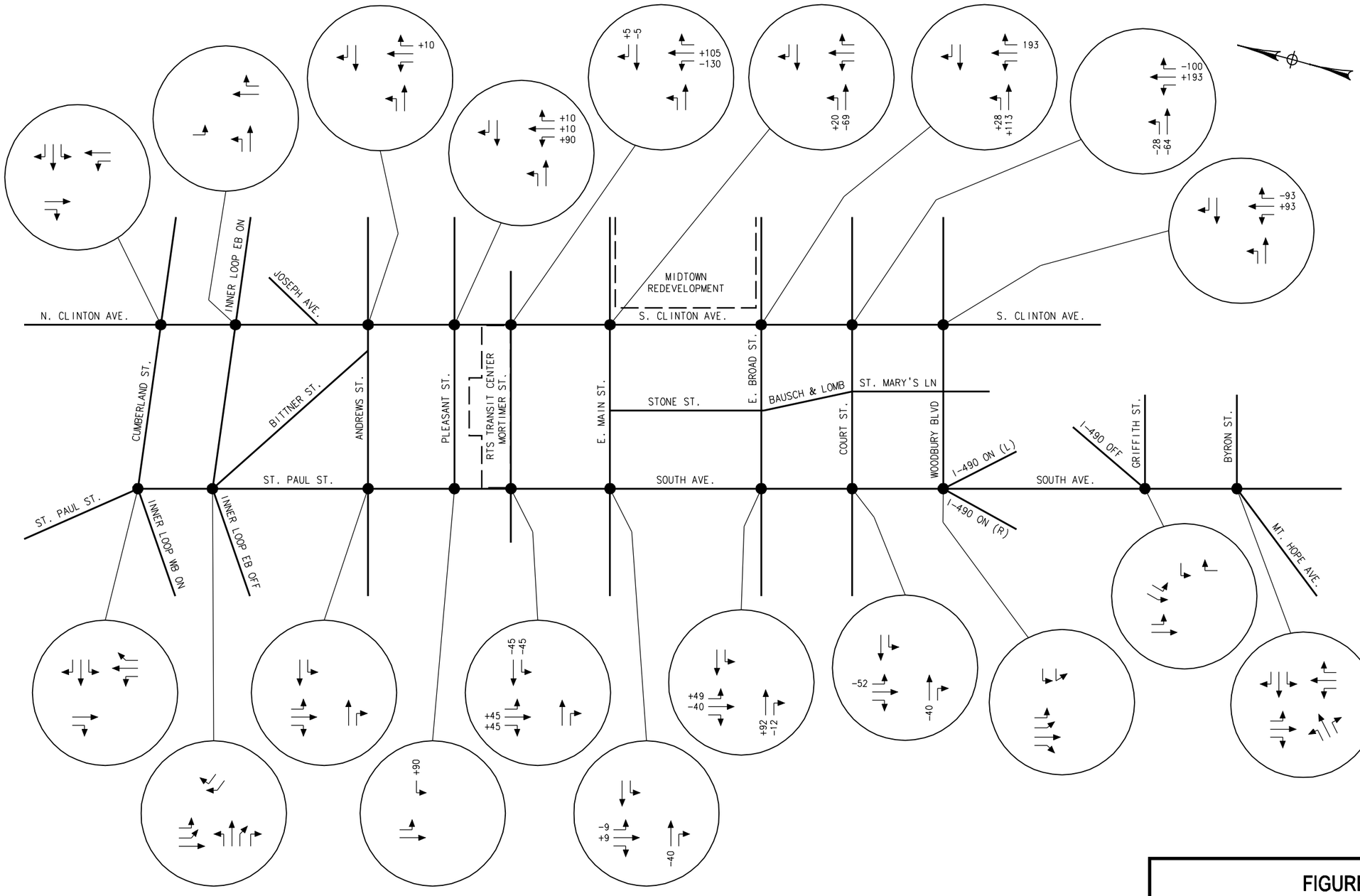

DATE: JAN 5, 2012	**FIGURE A2**
SCALE: NONE	TRAFFIC REDISTRIBUTION FROM FUTURE GEOMETRIC CHANGES AM PEAK HOUR
	TWO-WAY CONVERSION STUDY NORTH/SOUTH CLINTON AVENUE & ST. PAUL STREET/SOUTH AVENUE CITY OF ROCHESTER, NEW YORK

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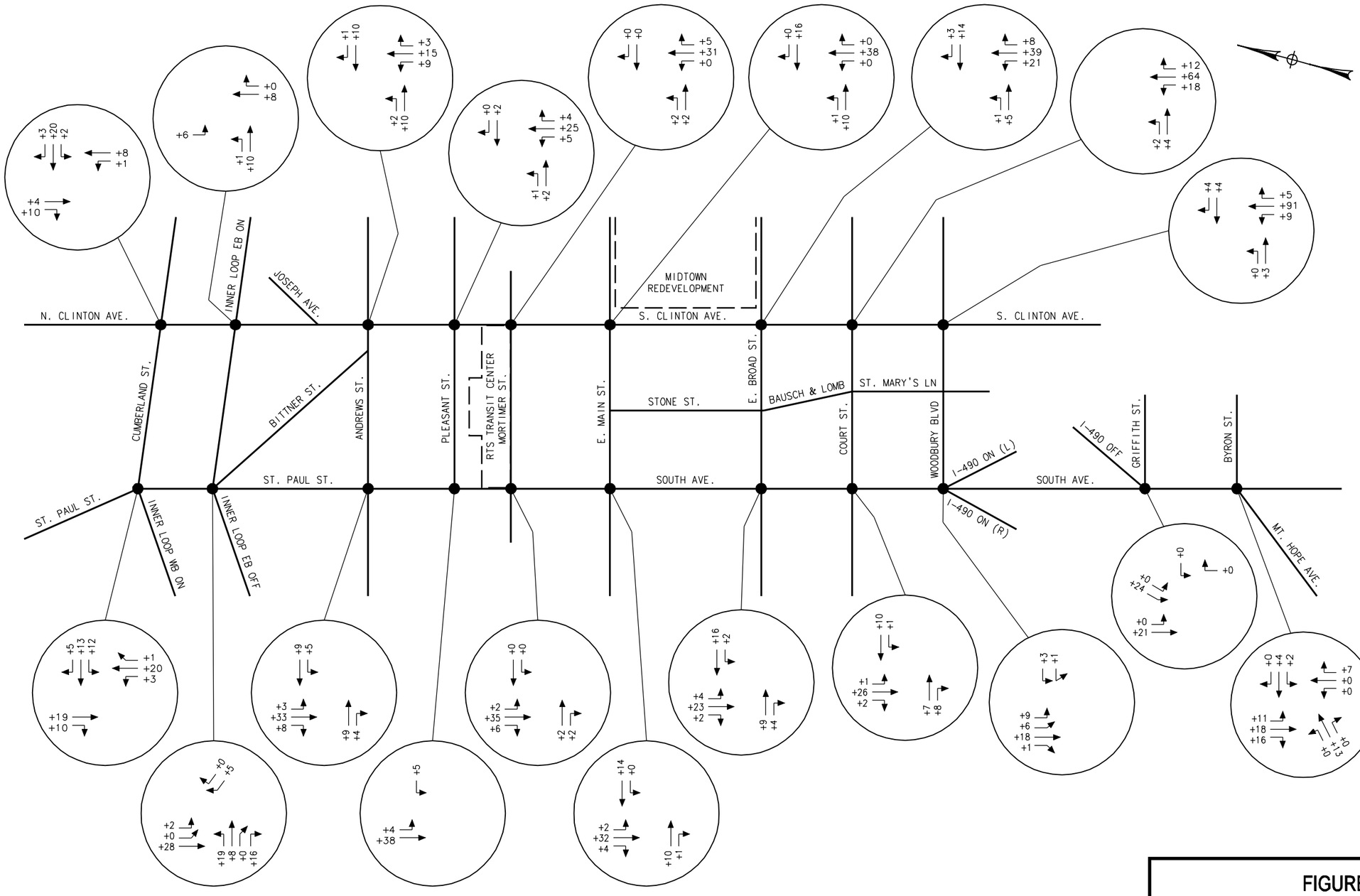

FIGURE A3

20 YEAR BACKGROUND GROWTH
AM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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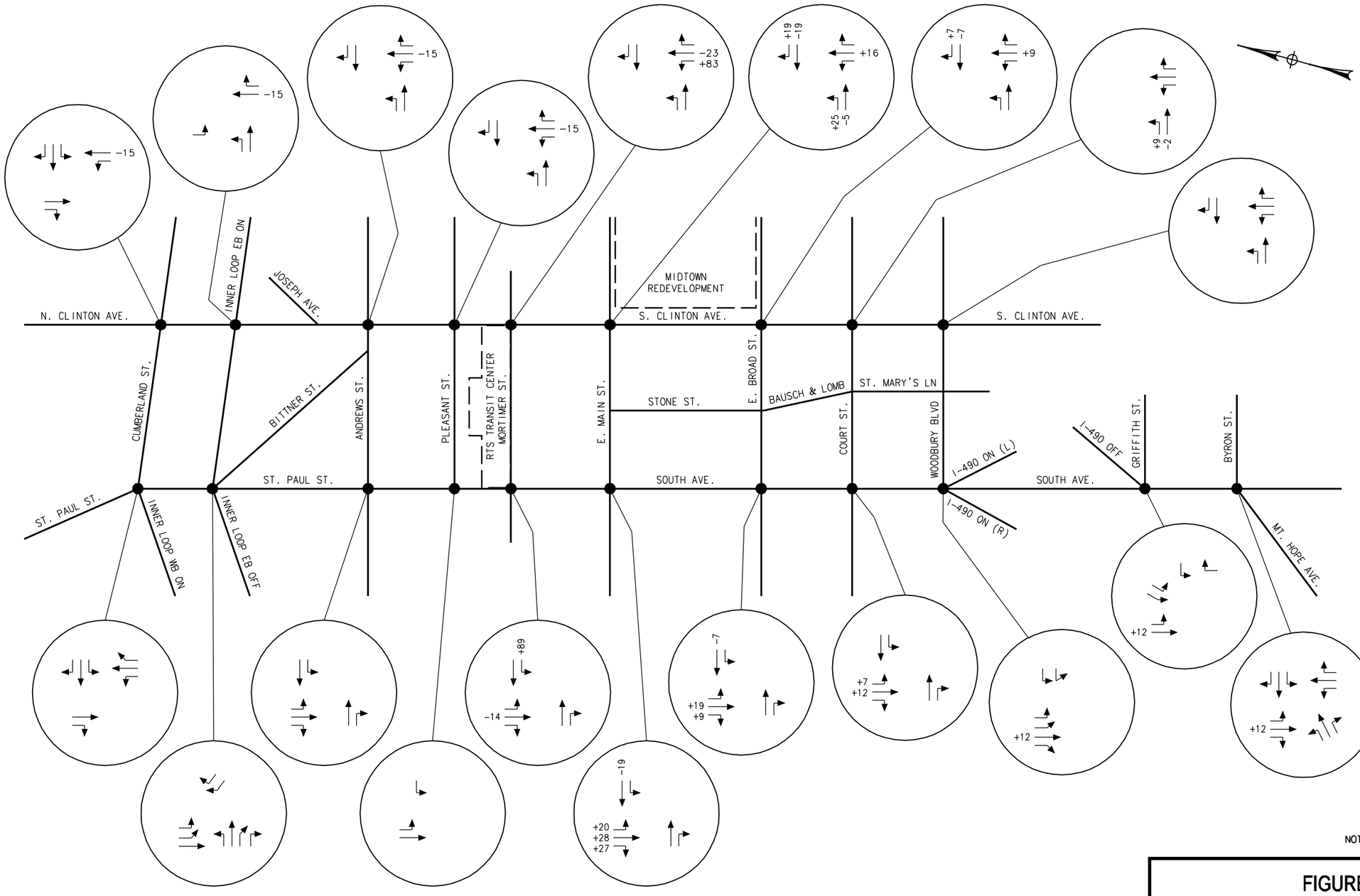

NOTE: ALL TRIPS SHOWN ARE BUSES.

FIGURE A4

RTS TRANSIT CENTER
AM PEAK HOUR TRIP DIVERSIONS

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
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DATE: JAN 5, 2012

SCALE: NONE

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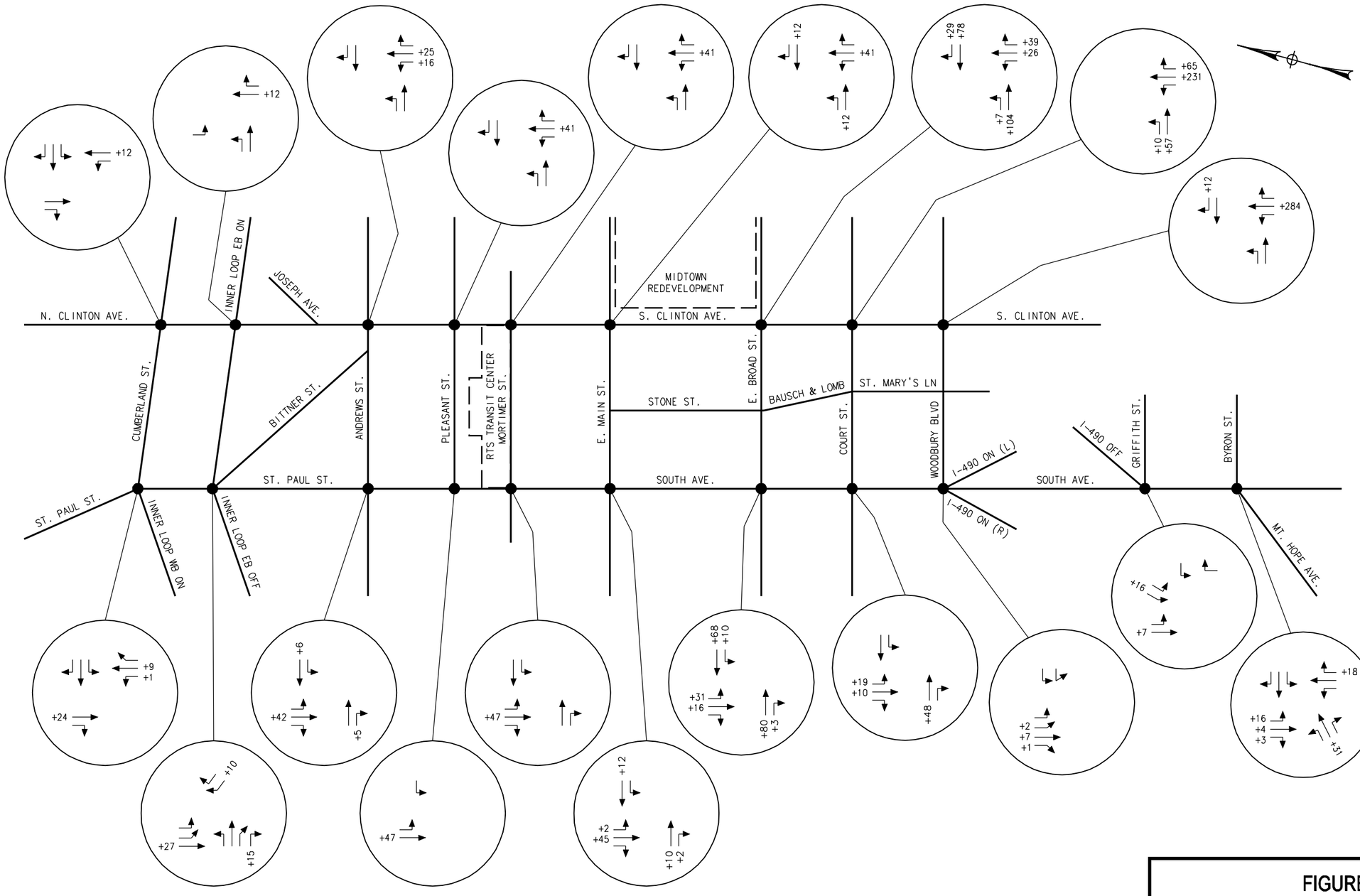

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FIGURE A5

MIDTOWN REDEVELOPMENT
AM PEAK HOUR TRIP GENERATION

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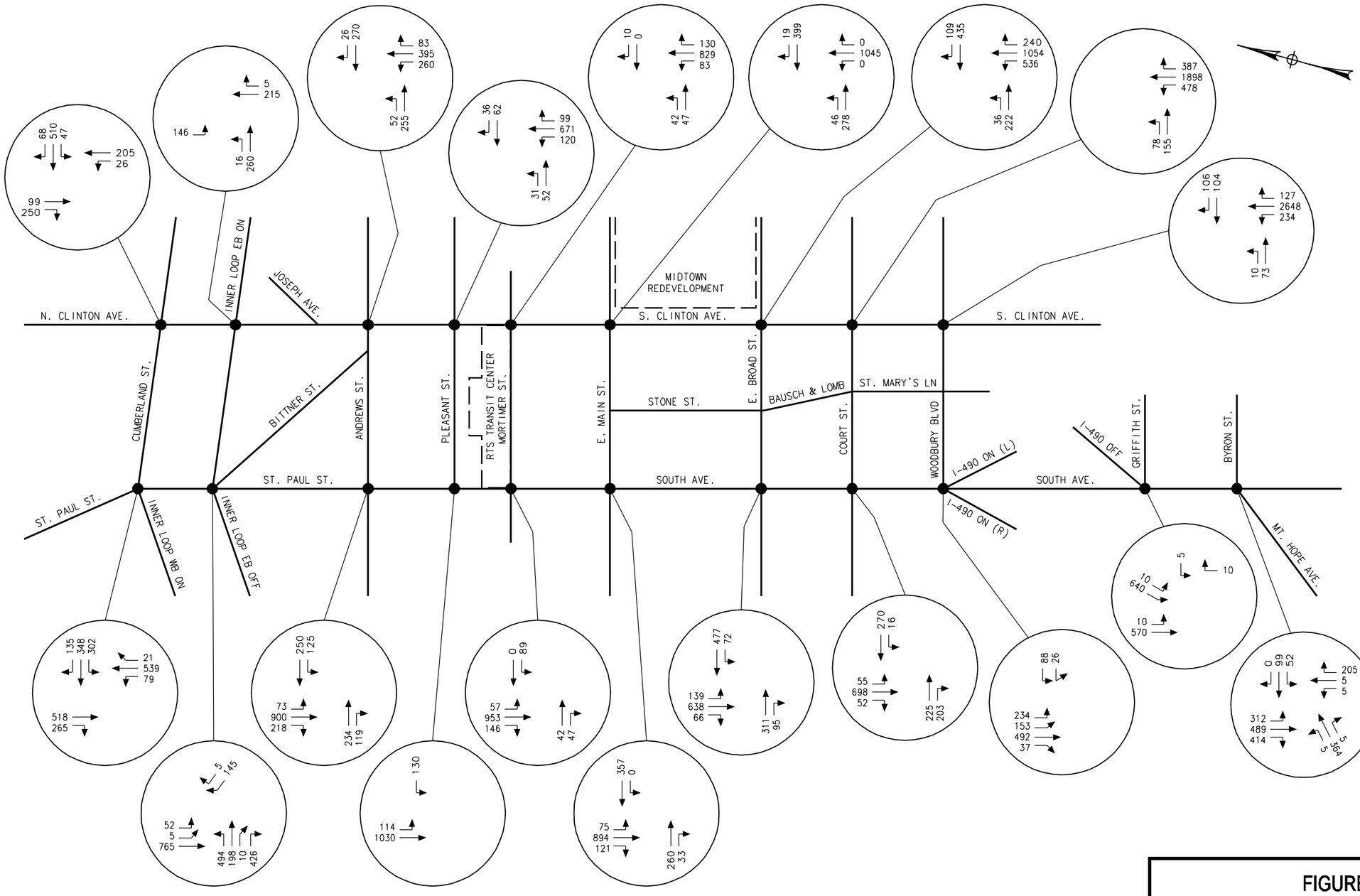

DATE: JAN 5, 2012	**FIGURE A6**
SCALE: NONE	FUTURE NO-BUILD AM PEAK HOUR TRAFFIC VOLUMES
	TWO-WAY CONVERSION STUDY NORTH/SOUTH CLINTON AVENUE & ST. PAUL STREET/SOUTH AVENUE CITY OF ROCHESTER, NEW YORK

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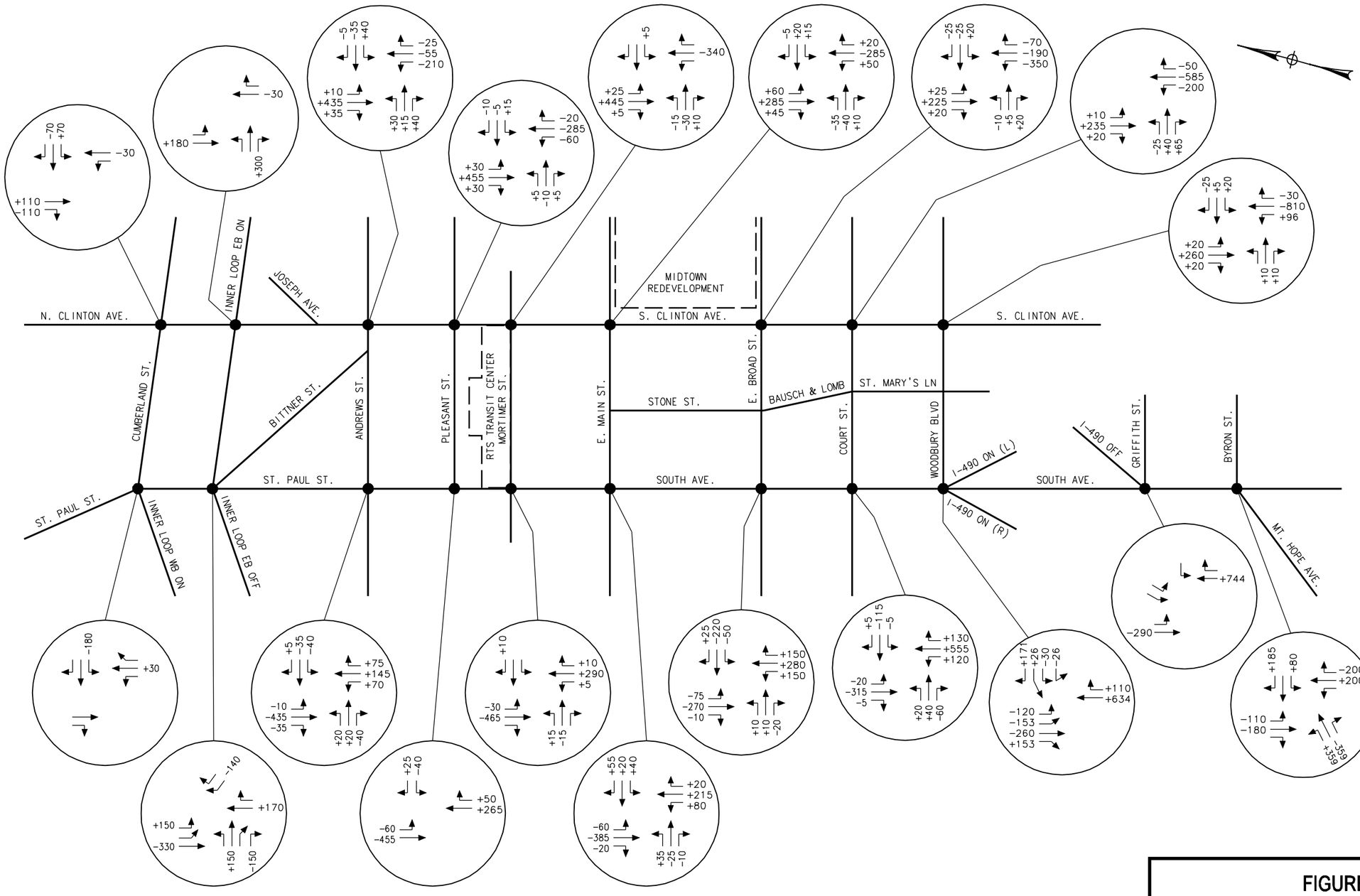

DATE: JAN 5, 2012	**FIGURE A7**
SCALE: NONE	TWO-WAY CONVERSION TRAFFIC REDISTRIBUTION FUTURE AM PEAK HOUR
	TWO-WAY CONVERSION STUDY NORTH/SOUTH CLINTON AVENUE & ST. PAUL STREET/SOUTH AVENUE CITY OF ROCHESTER, NEW YORK

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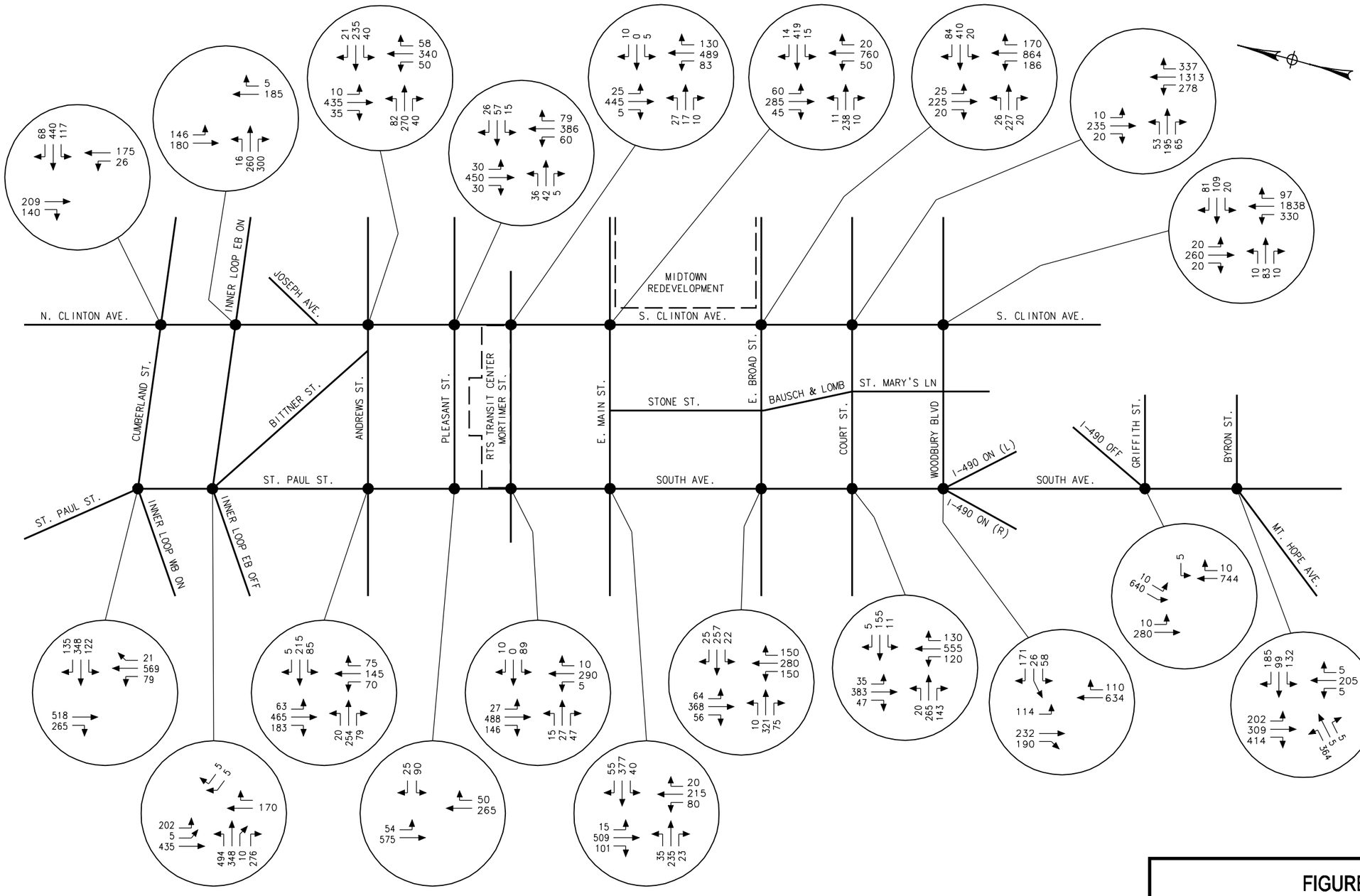

FIGURE A8

FUTURE TWO-WAY CONVERSION
AM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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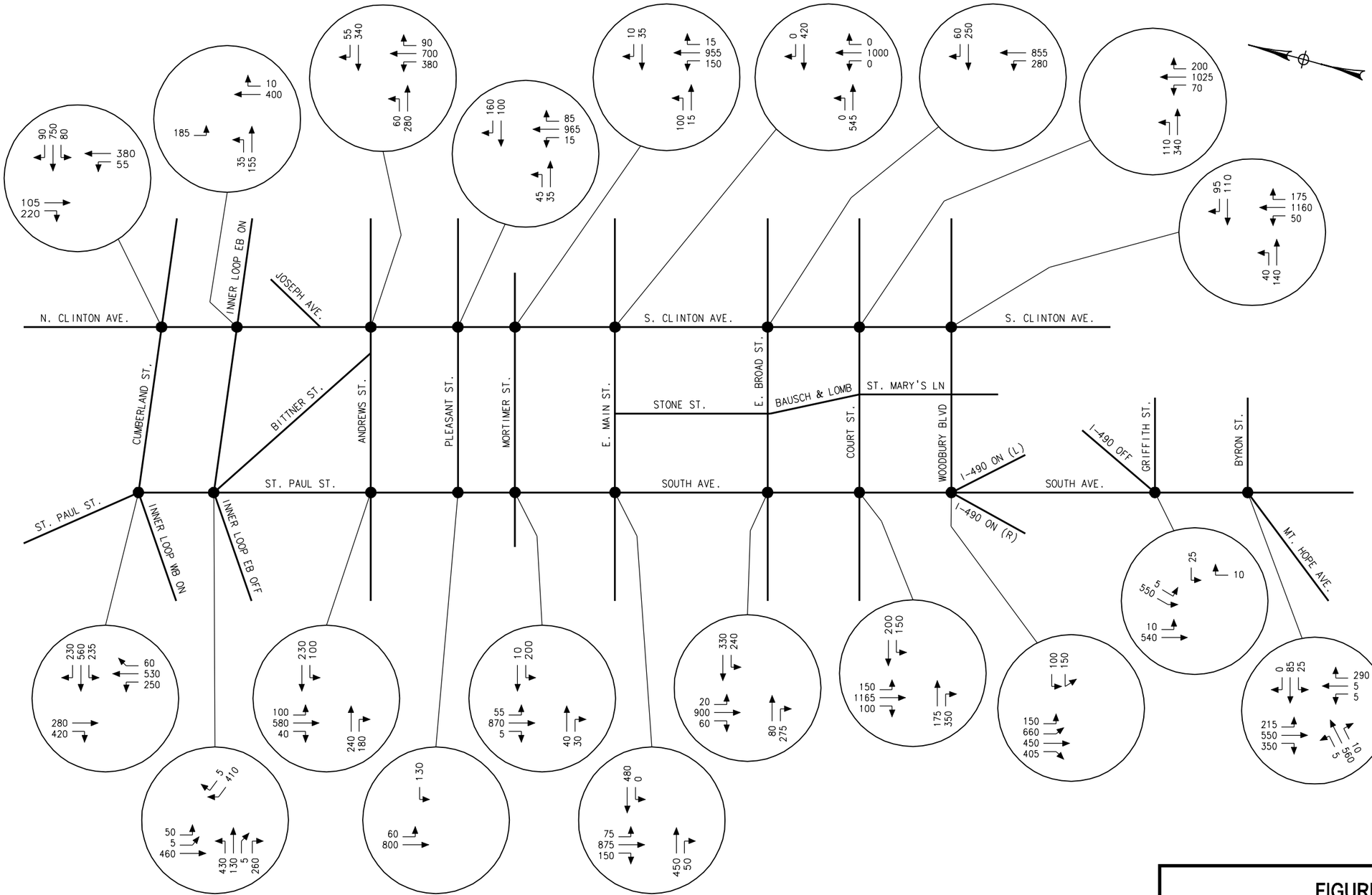
Appendix B

PM Peak Hour Traffic Volume Diagrams



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SCALE: NONE

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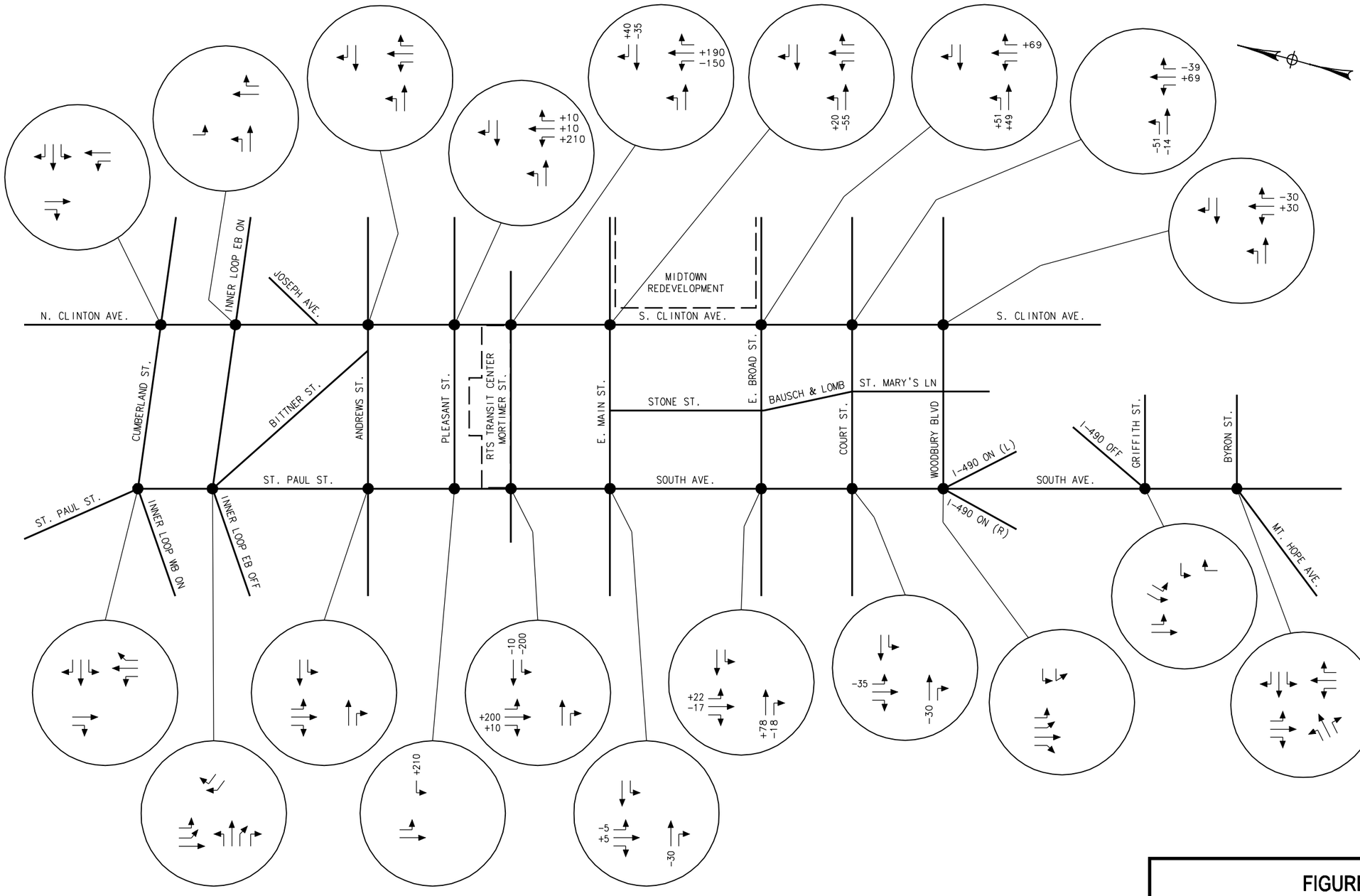
FIGURE B1

2011 PM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK



DATE: JAN 5, 2012	**FIGURE B2**
SCALE: NONE	TRAFFIC REDISTRIBUTION FROM FUTURE GEOMETRIC CHANGES PM PEAK HOUR
	TWO-WAY CONVERSION STUDY NORTH/SOUTH CLINTON AVENUE & ST. PAUL STREET/SOUTH AVENUE CITY OF ROCHESTER, NEW YORK

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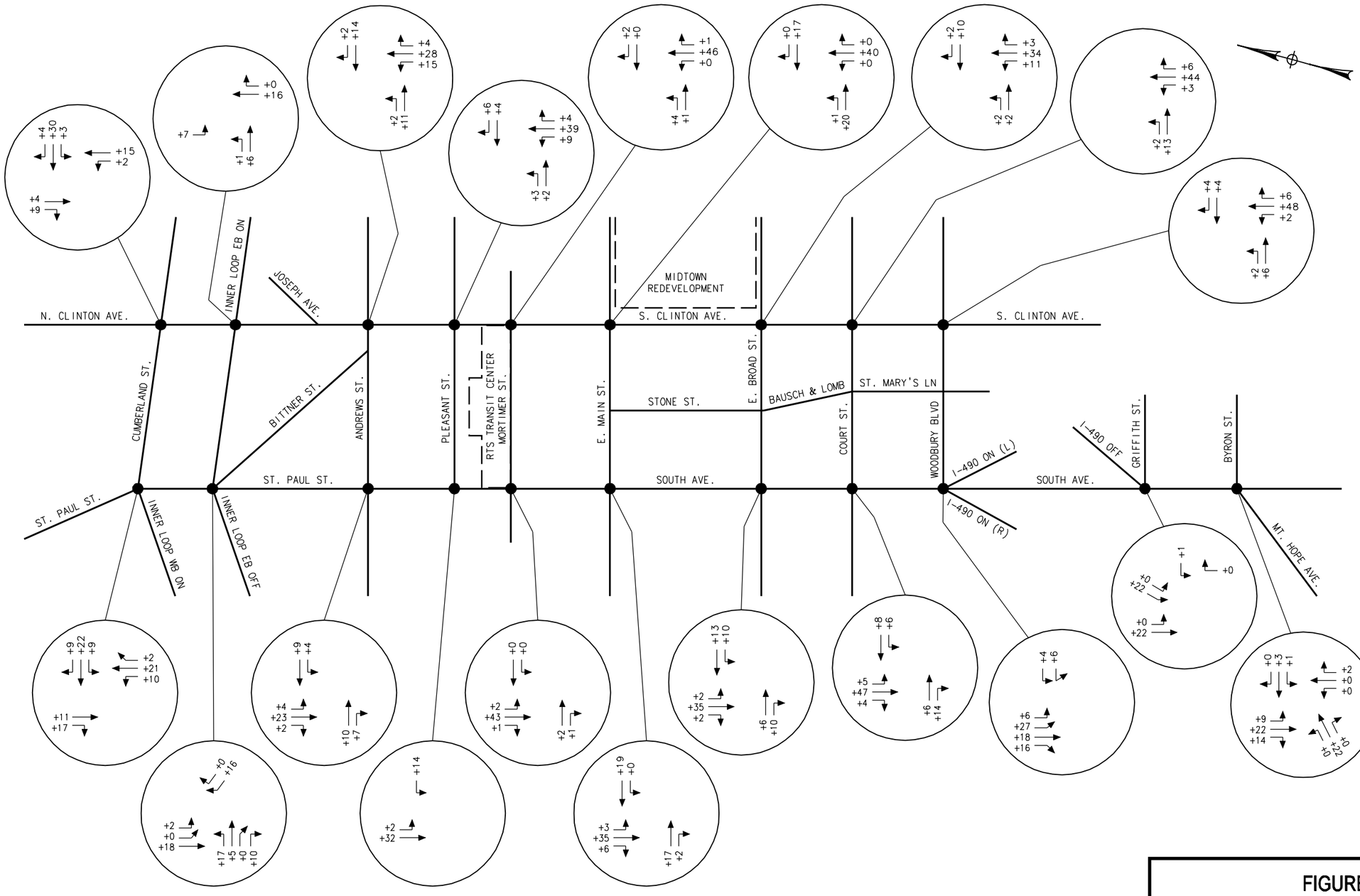

DATE: JAN 5, 2012	**FIGURE B3**
SCALE: NONE	20 YEAR BACKGROUND GROWTH PM PEAK HOUR
© 2011 LABERGE ENGINEERING & CONSULTING GROUP LTD.	TWO-WAY CONVERSION STUDY NORTH/SOUTH CLINTON AVENUE & ST. PAUL STREET/SOUTH AVENUE CITY OF ROCHESTER, NEW YORK

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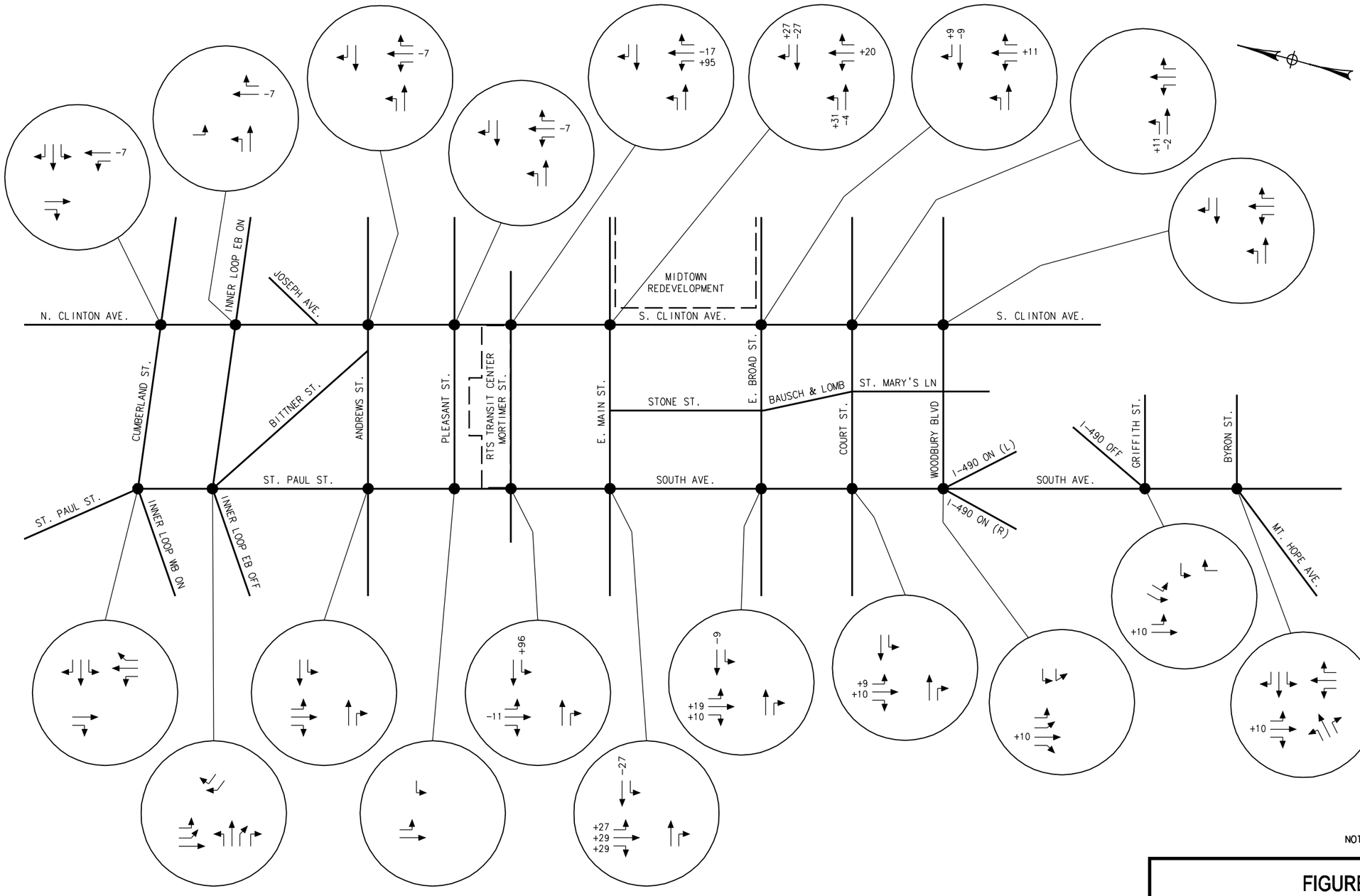

NOTE: ALL TRIPS SHOWN ARE BUSES.

FIGURE B4

RTS TRANSIT CENTER
PM PEAK HOUR TRIP DIVERSIONS

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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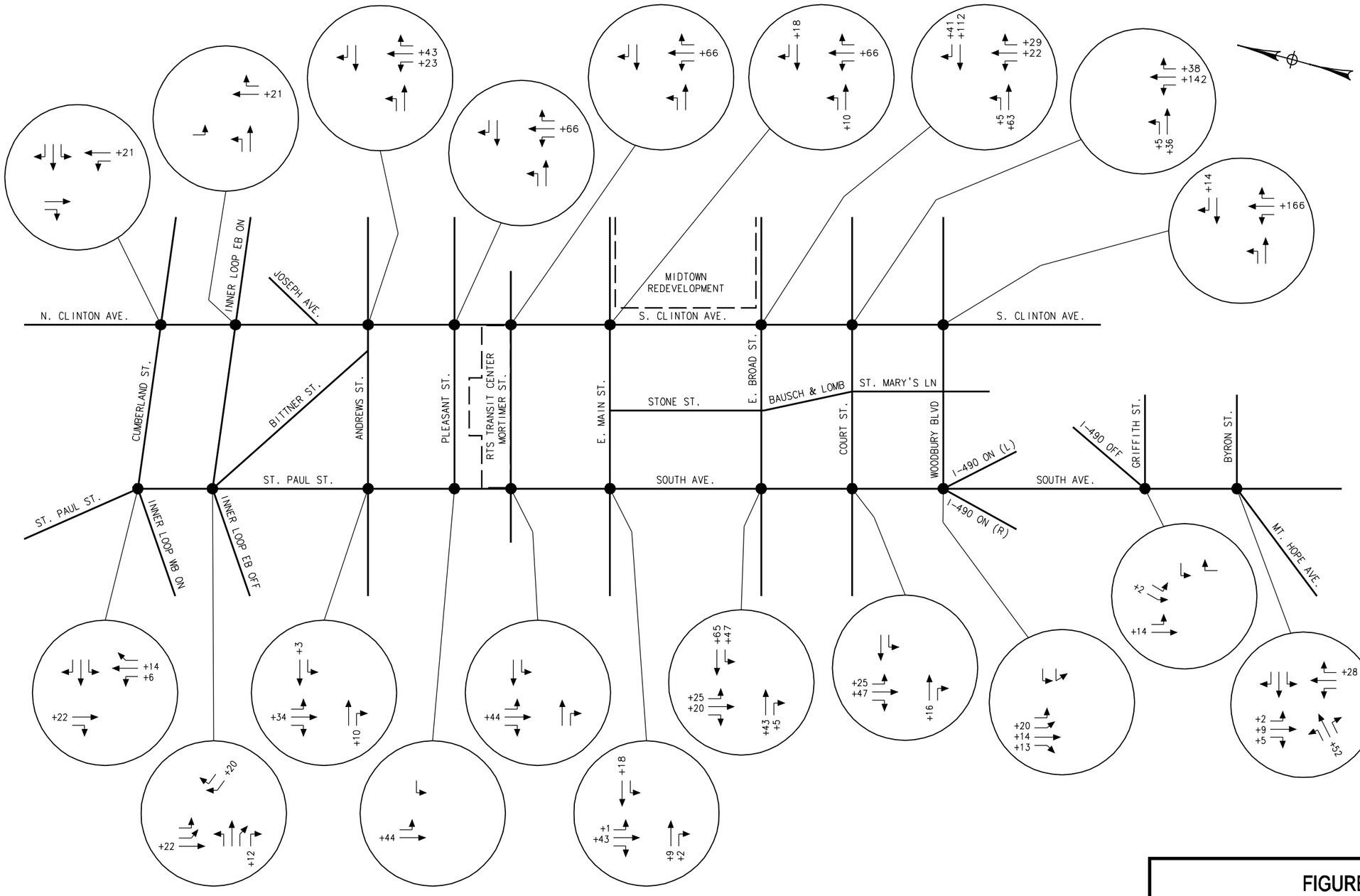

FIGURE B5

MIDTOWN REDEVELOPMENT
PM PEAK HOUR TRIP GENERATION

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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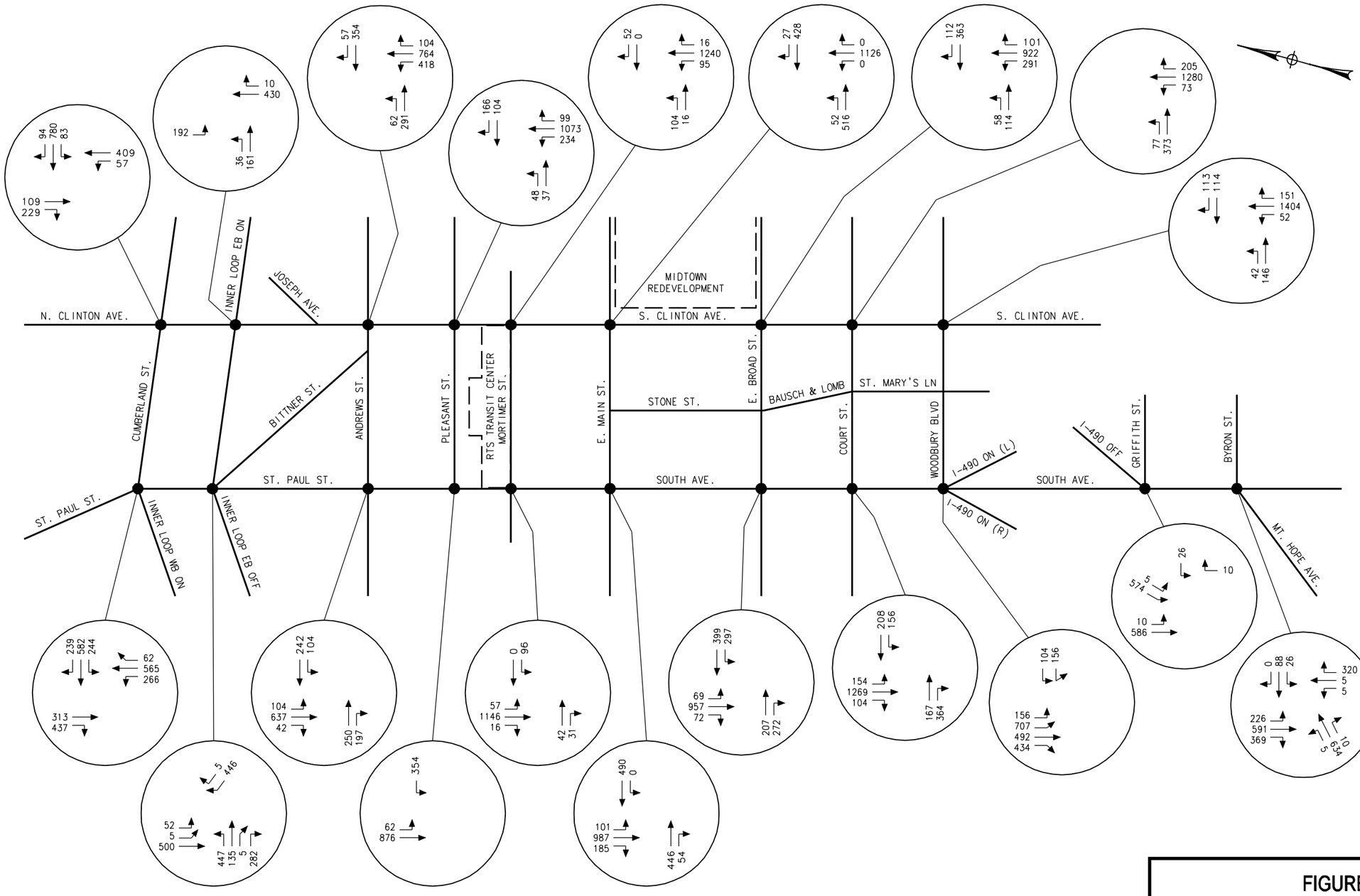

FIGURE B6

FUTURE NO-BUILD
PM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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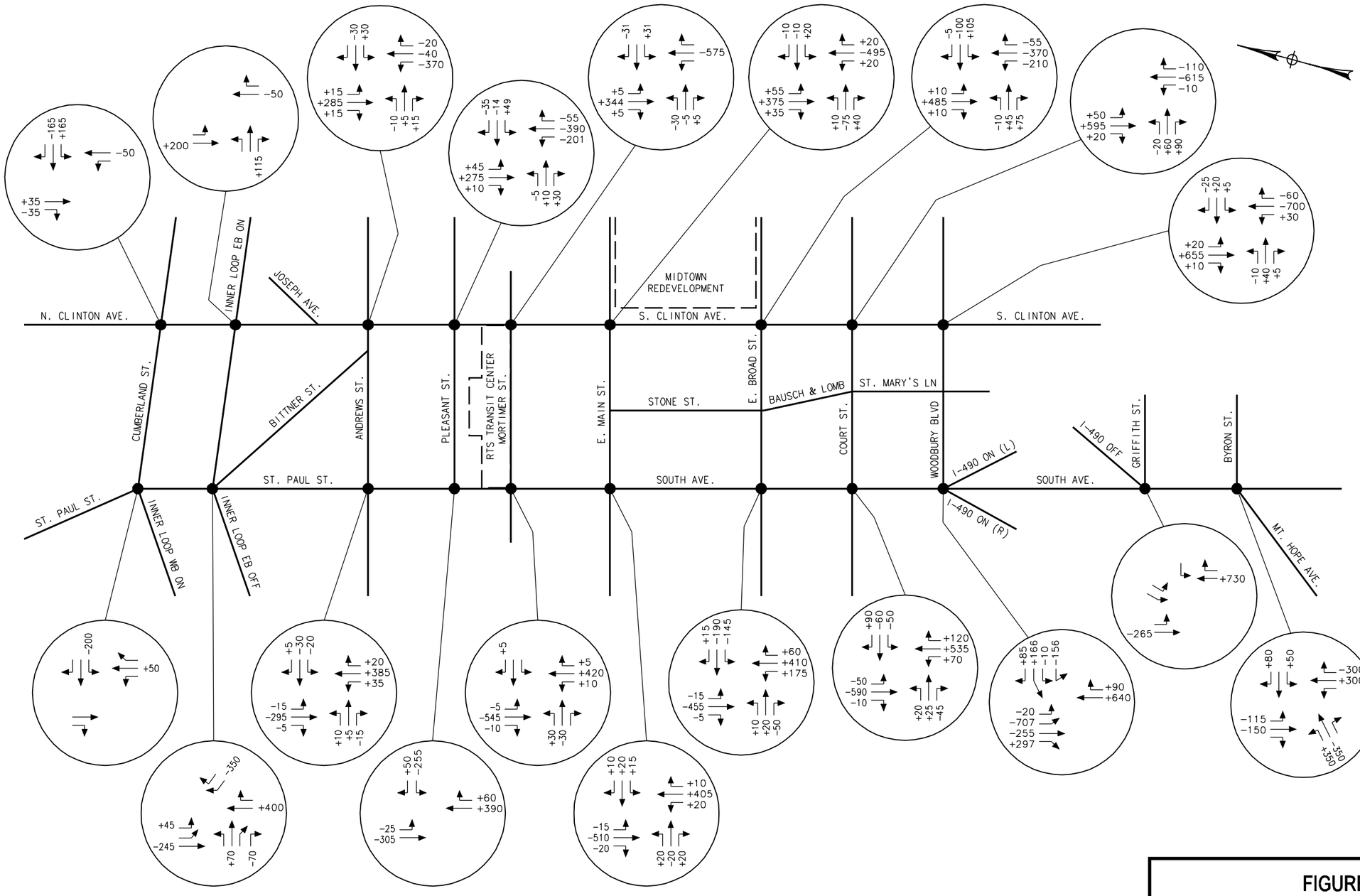

FIGURE B7

TWO-WAY CONVERSION TRAFFIC REDISTRIBUTION
FUTURE PM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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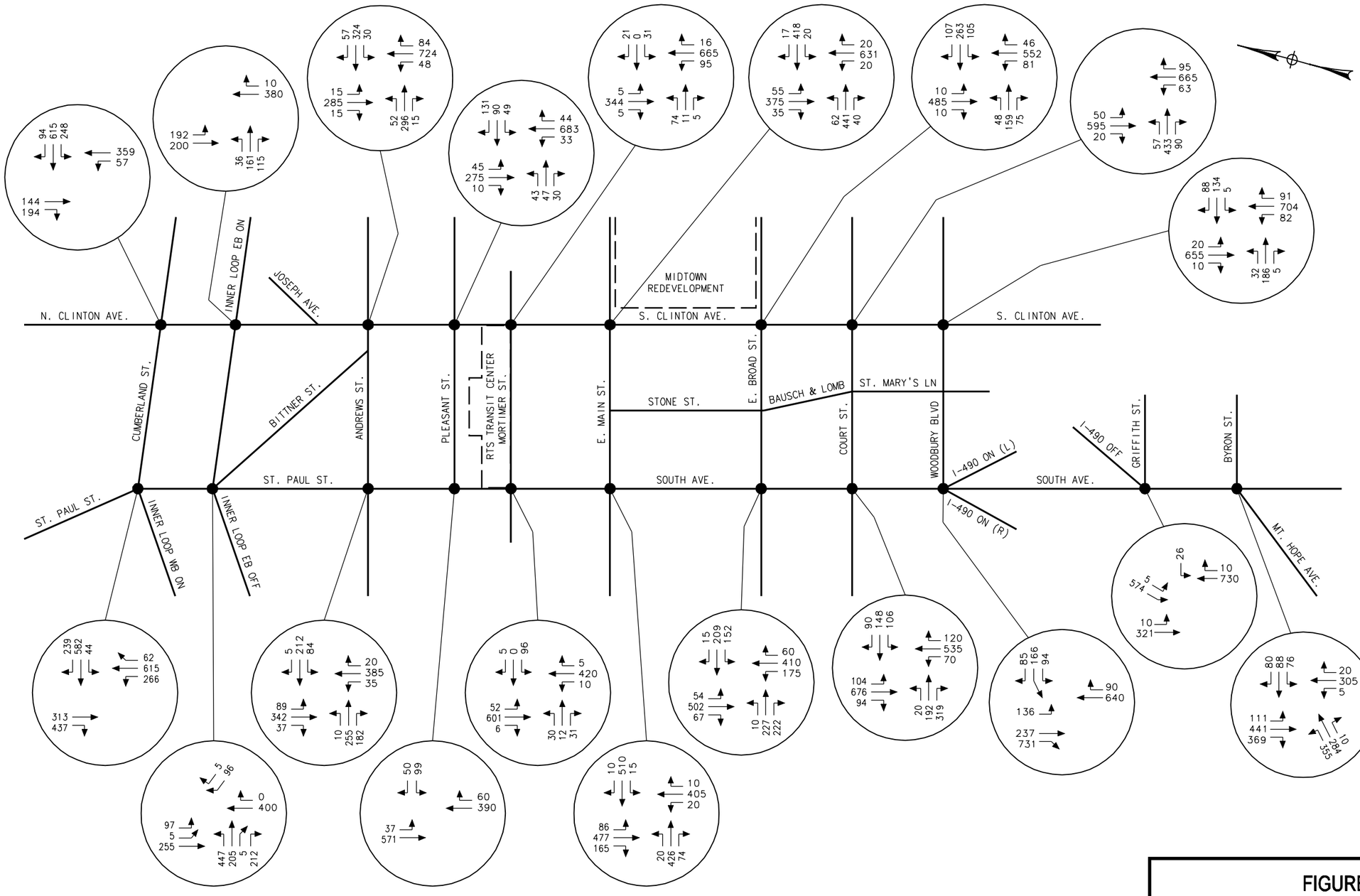

FIGURE B8

FUTURE TWO-WAY CONVERSION
PM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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Appendix C

Alternate 1
AM Peak Hour Traffic Volume Diagrams

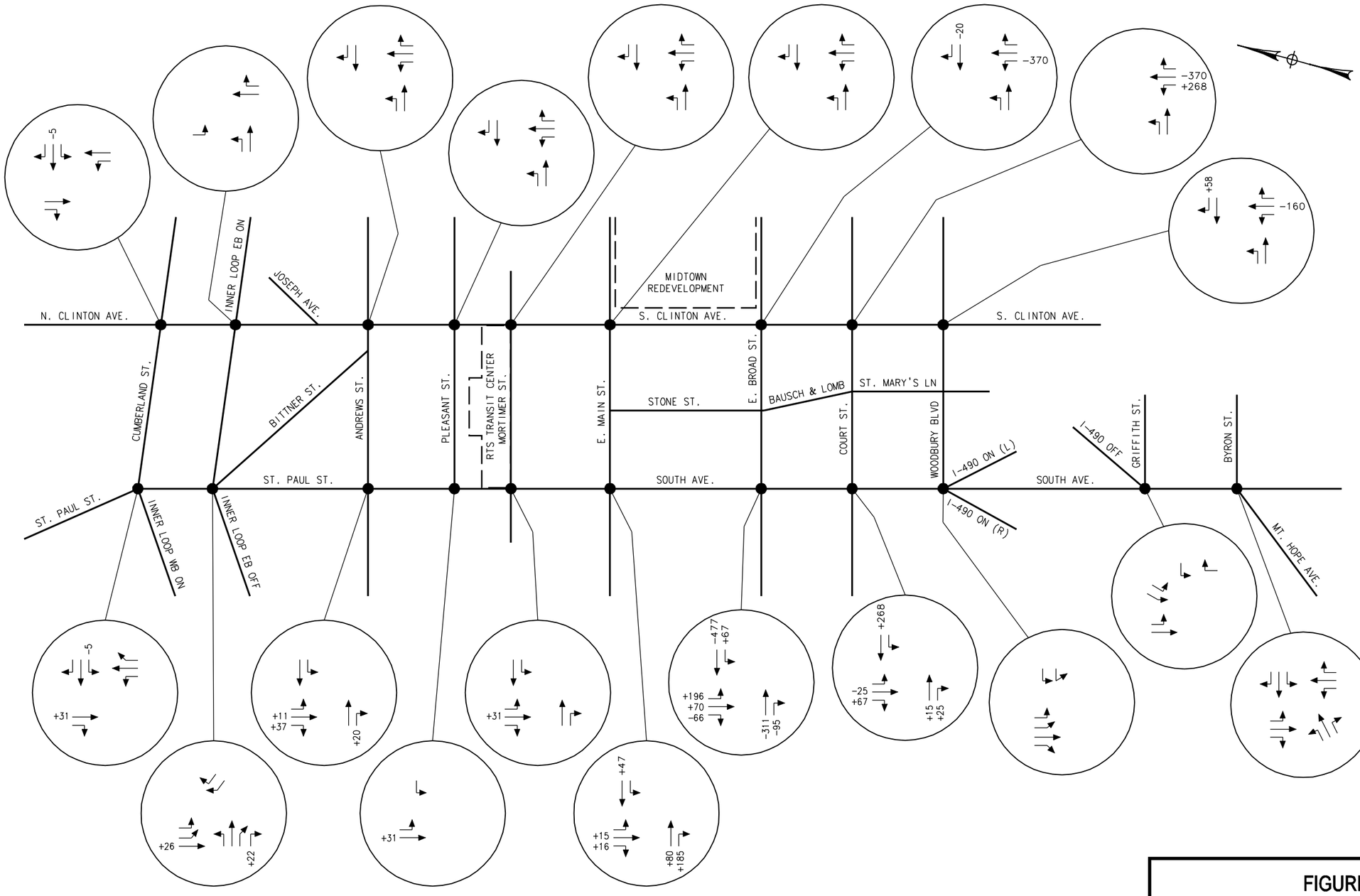

FIGURE C1

ALTERNATE 1
BROAD ST CLOSURE TRAFFIC REDISTRIBUTION
AM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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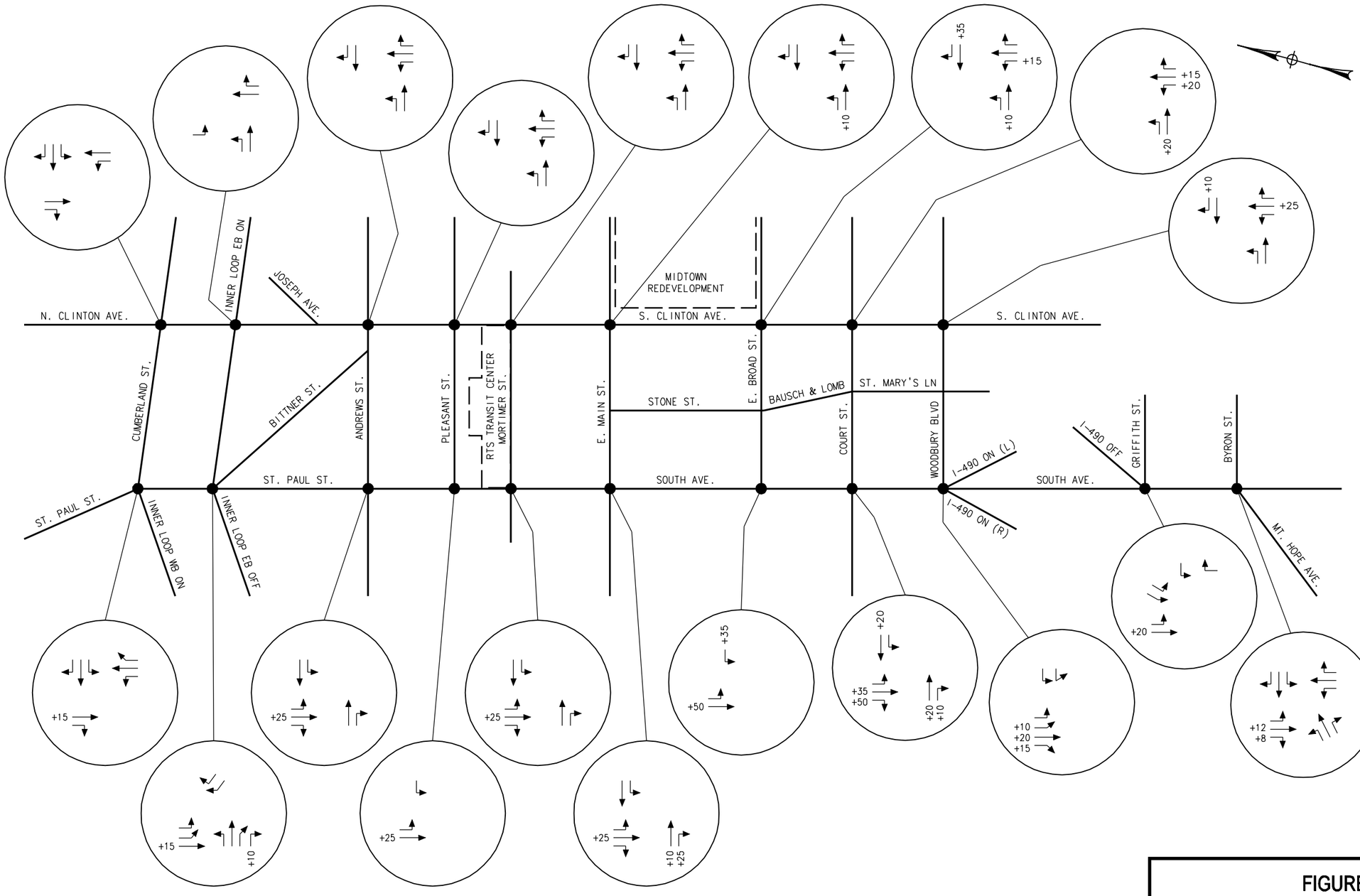

NOTE; TRIP GENERATION VOLUMES SHOWN ARE BASED ON FIGURE 4-2A "SCENARIO 3 - 2025 AM PEAK HOUR 100% DEVELOPMENT DISTRIBUTION" FROM THE BROAD STREET AQUEDUCT TRAFFIC IMPACT STUDY DEVELOPED BY T. Y. LYN INTERNATIONAL, 2009.

DATE: JAN 5, 2012

SCALE: NONE

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FIGURE C2

ALTERNATE 1
BROAD ST AQUEDUCT PROJECT TRIP GENERATION
AM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

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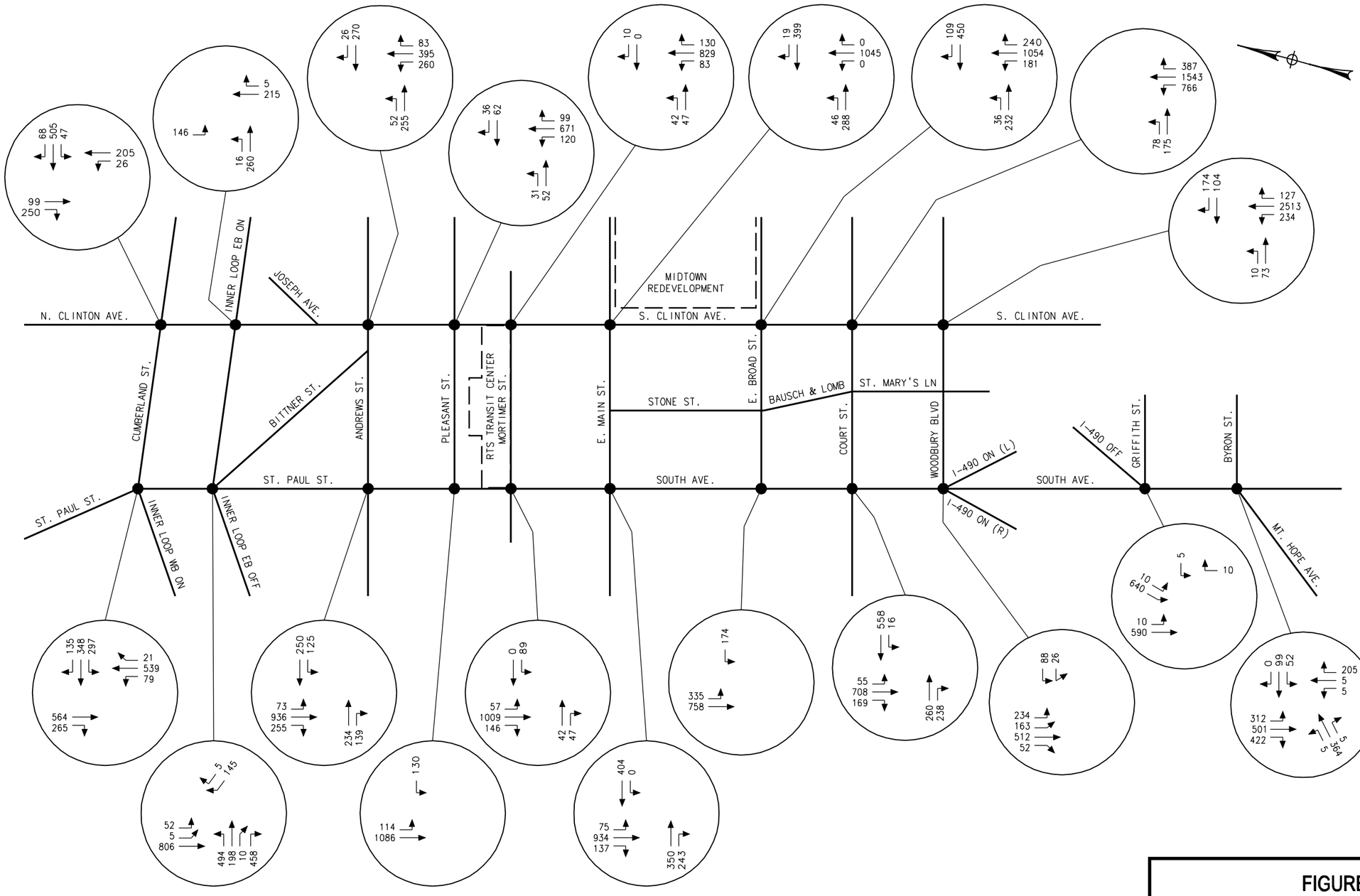

FIGURE C3

ALTERNATE 1 – FUTURE NO-BUILD
AM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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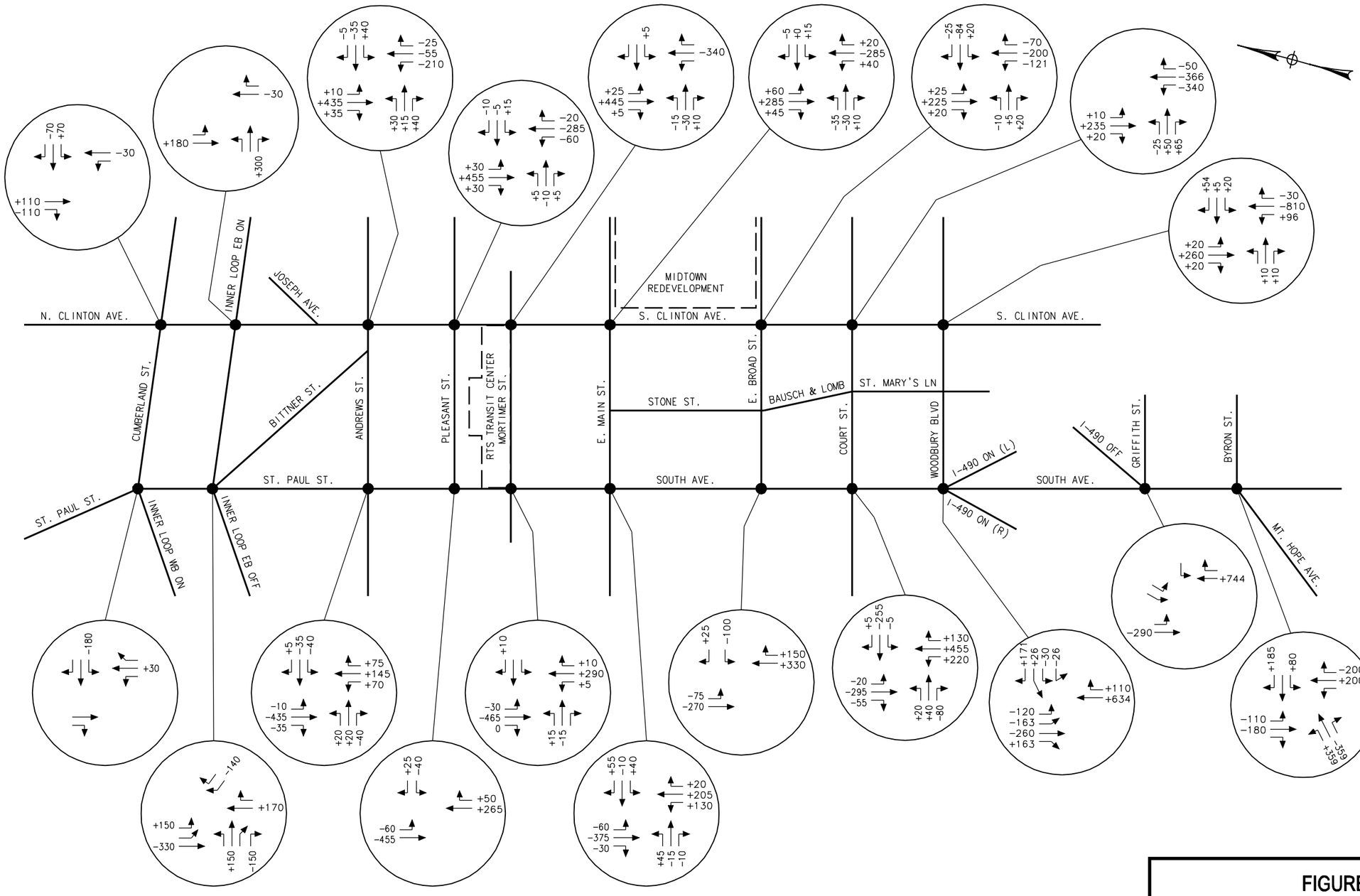

DATE: JAN 5, 2012	**FIGURE C4**
SCALE: NONE	ALTERNATE 1 TWO-WAY CONVERSION TRAFFIC REDISTRIBUTION FUTURE AM PEAK HOUR
	TWO-WAY CONVERSION STUDY NORTH/SOUTH CLINTON AVENUE & ST. PAUL STREET/SOUTH AVENUE CITY OF ROCHESTER, NEW YORK

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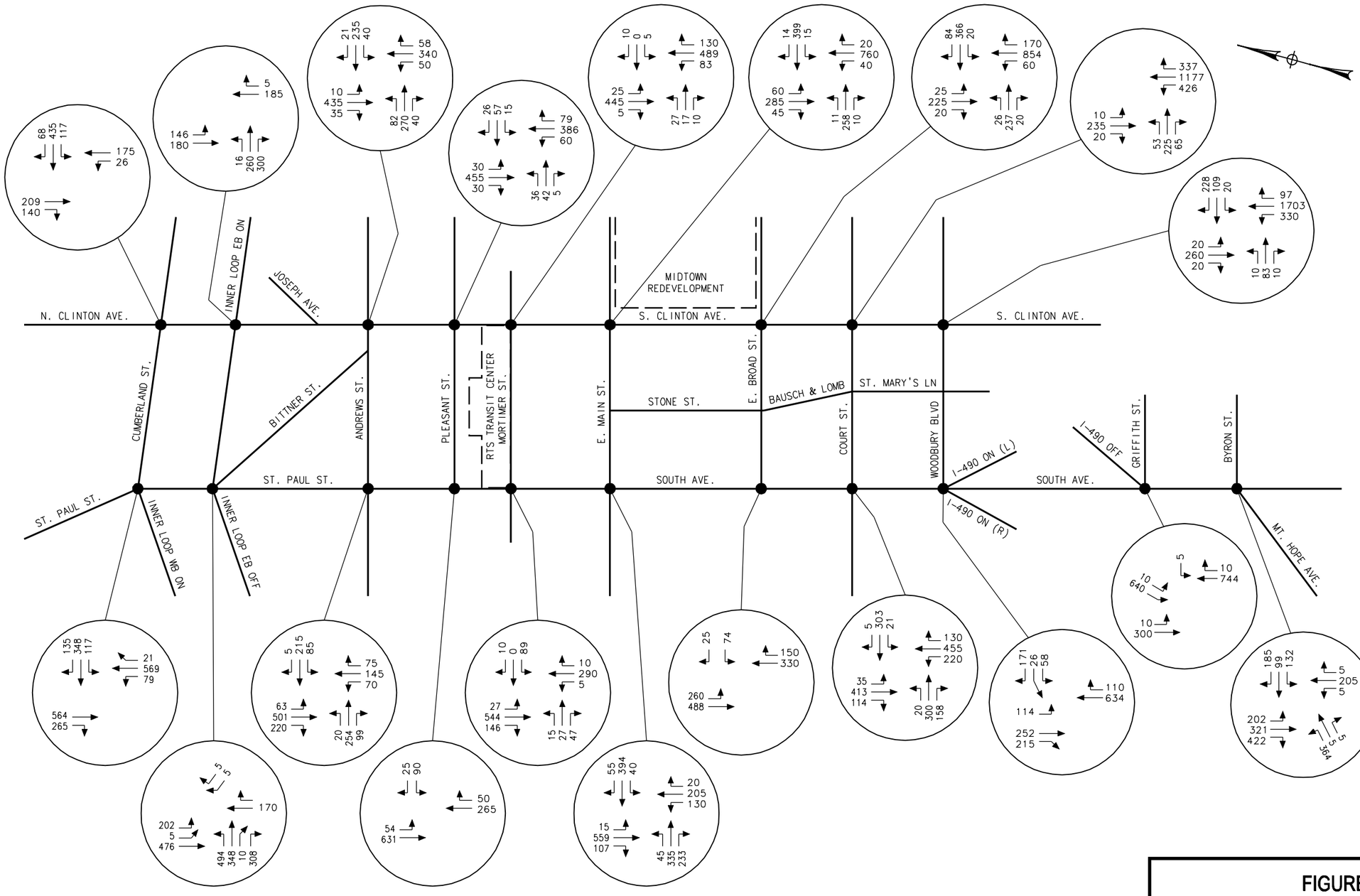

FIGURE C5

ALTERNATE 1 – FUTURE TWO-WAY CONVERSION
AM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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Appendix D

Alternate 1
PM Peak Hour Traffic Volume Diagrams

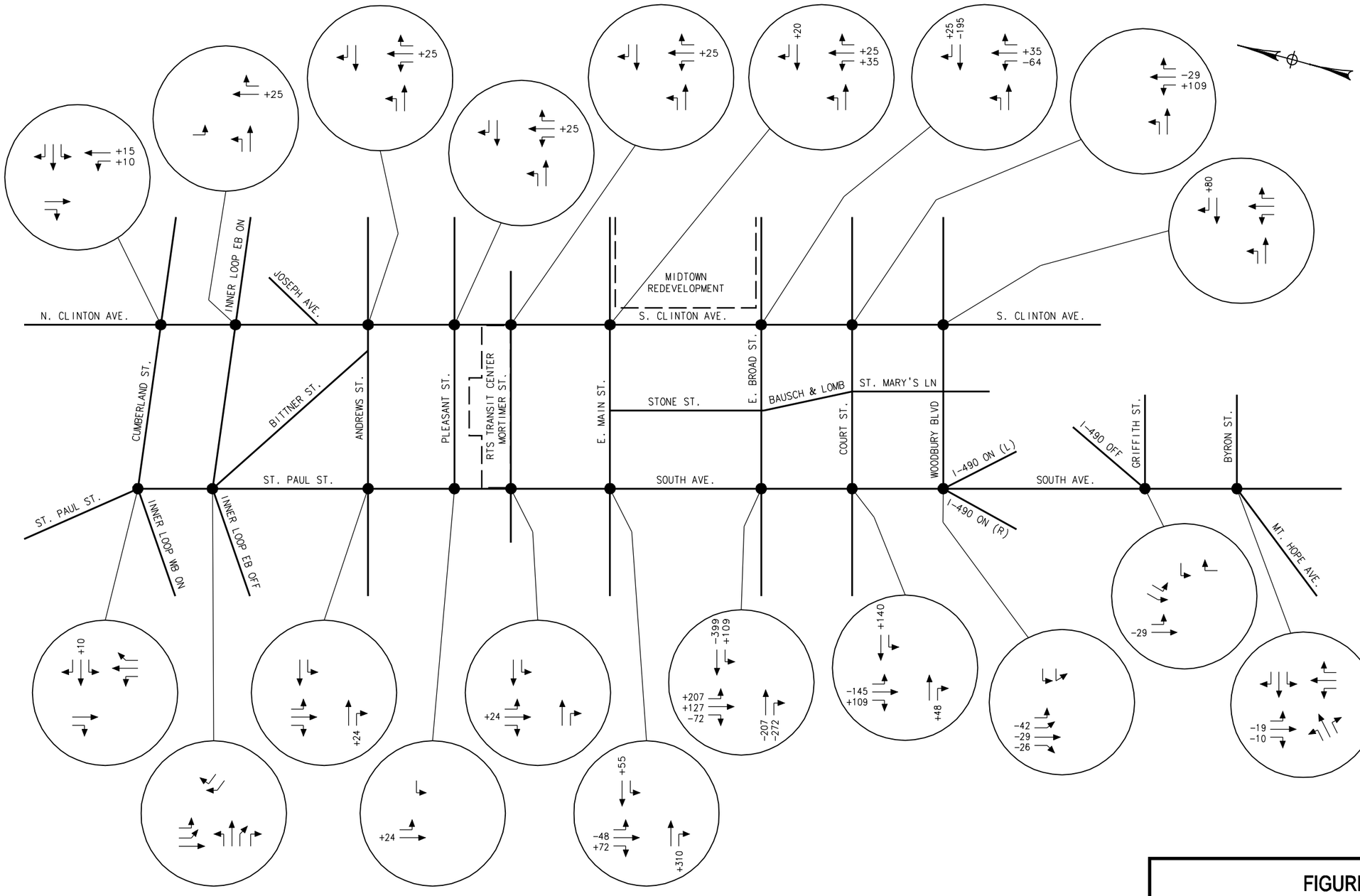

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FIGURE D1

ALTERNATE 1
BROAD ST CLOSURE TRAFFIC REDISTRIBUTION
PM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

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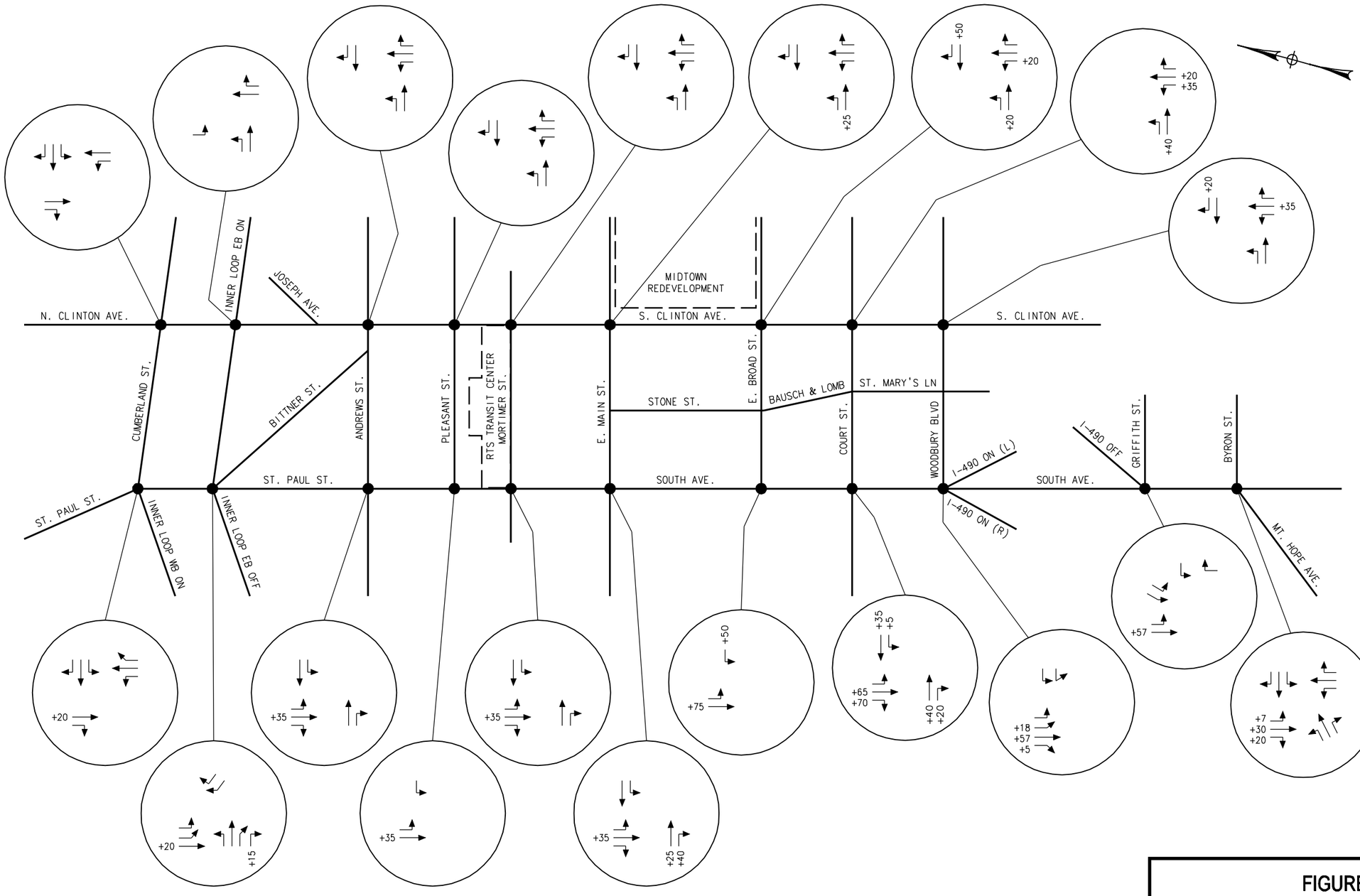

NOTE; TRIP GENERATION VOLUMES SHOWN ARE BASED ON FIGURE 4-2B "SCENARIO 3 - 2025 PM PEAK HOUR 100% DEVELOPMENT DISTRIBUTION" FROM THE BROAD STREET AQUEDUCT TRAFFIC IMPACT STUDY DEVELOPED BY T. Y. LYN INTERNATIONAL, 2009.

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SCALE: NONE

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FIGURE D2

ALTERNATE 1
BROAD ST AQUEDUCT TRIP GENERATION
PM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

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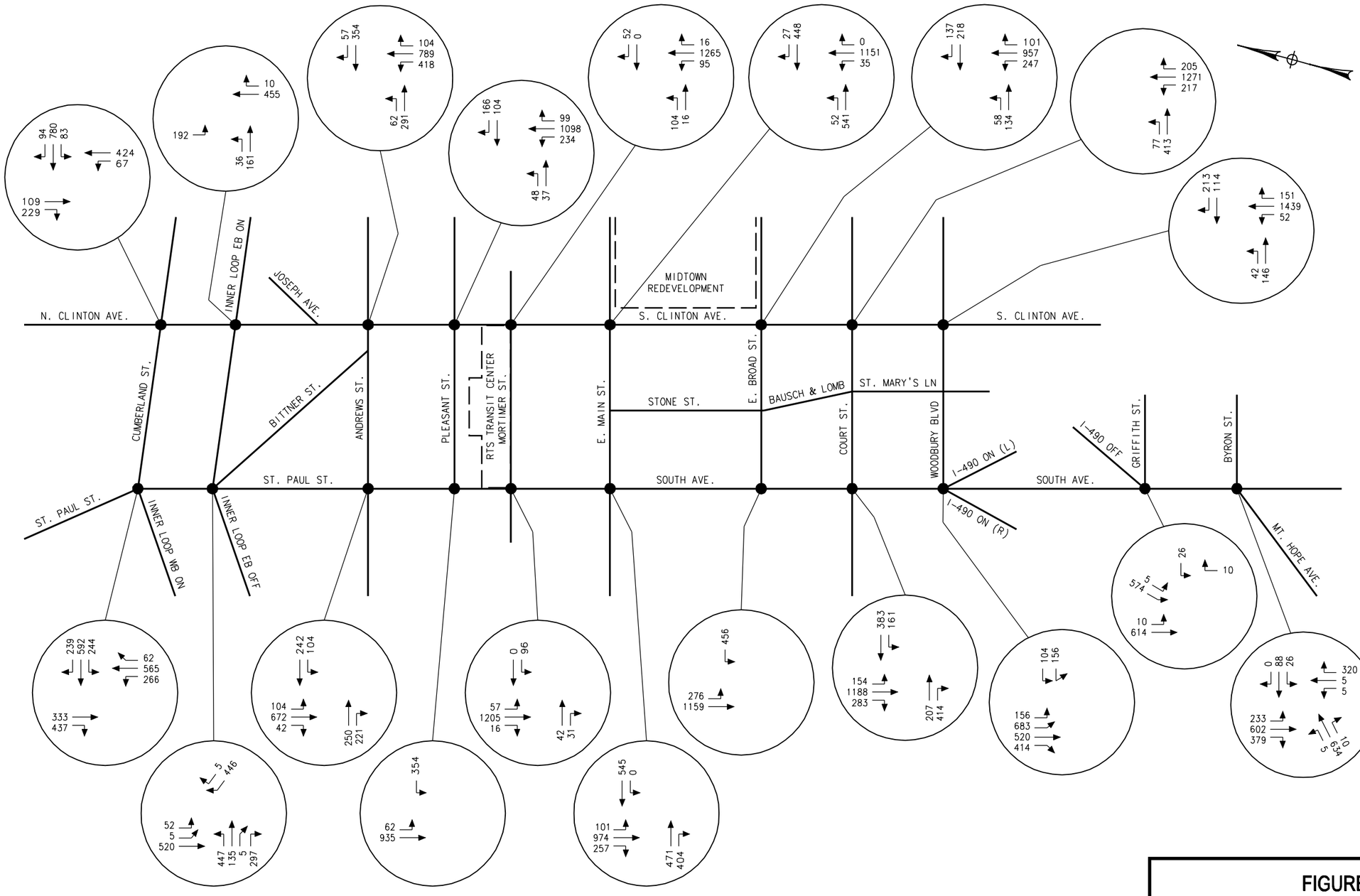

FIGURE D3

ALTERNATE 1 – FUTURE NO-BUILD
PM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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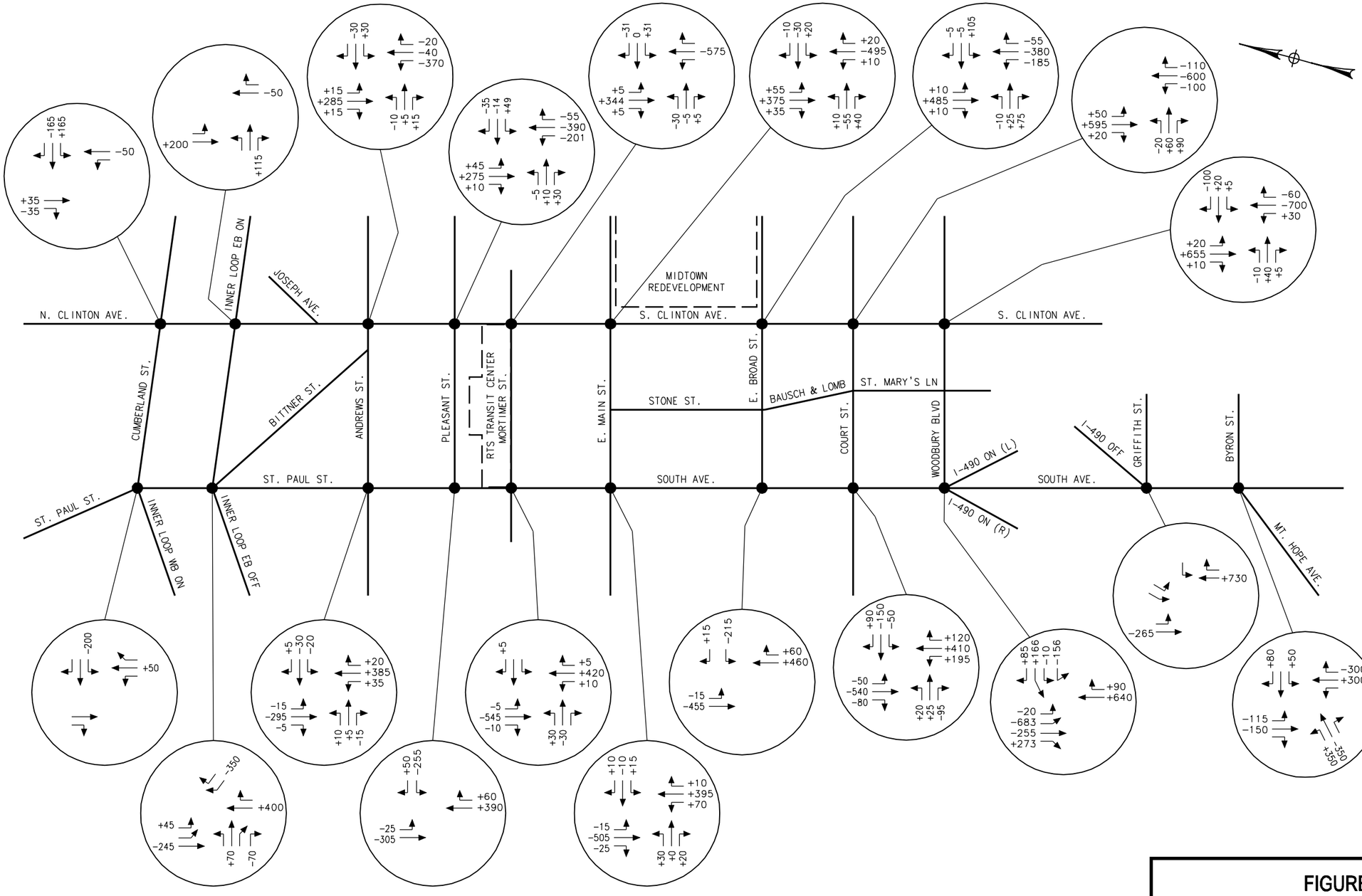

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SCALE: NONE

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FIGURE D4

ALTERNATE 1
TWO-WAY CONVERSION TRAFFIC REDISTRIBUTION
FUTURE PM PEAK HOUR

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

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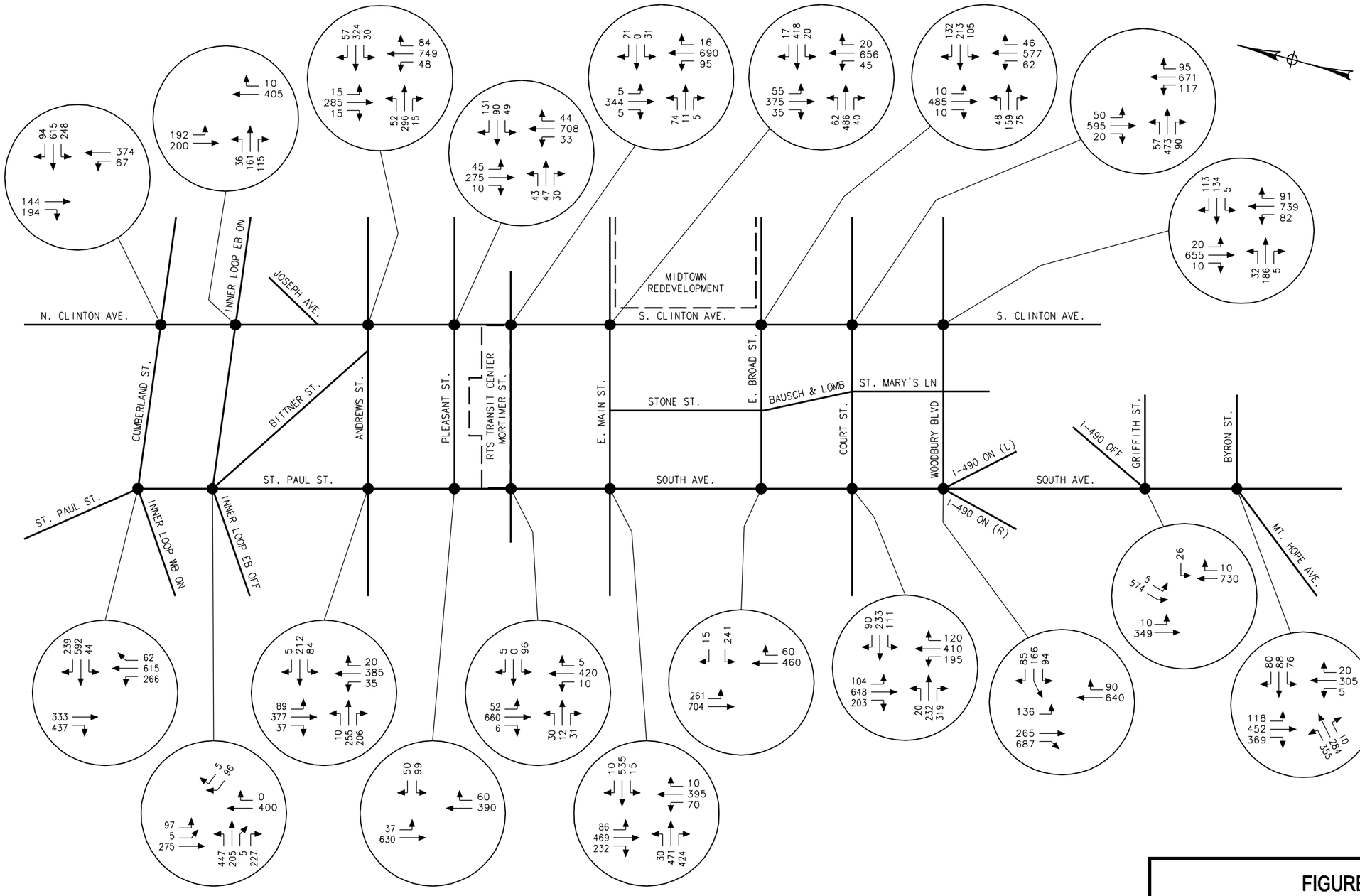

FIGURE D5

ALTERNATE 1 – FUTURE TWO-WAY CONVERSION
PM PEAK HOUR TRAFFIC VOLUMES

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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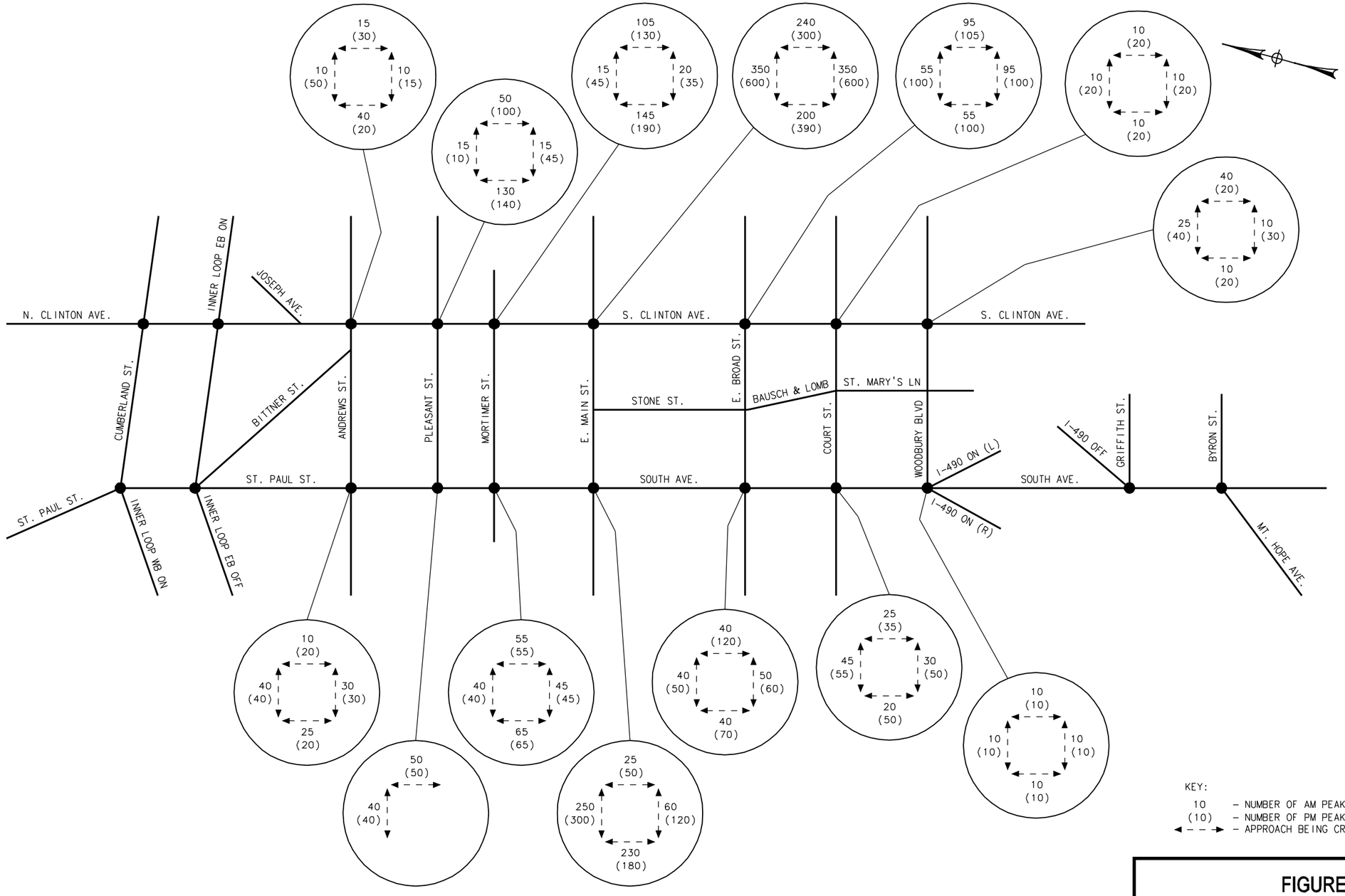
Appendix E

Peak Hour Pedestrian Diagrams



KEY:

10 – NUMBER OF AM PEAK HOUR PEDESTRIAN CROSSINGS
(10) – NUMBER OF PM PEAK HOUR PEDESTRIAN CROSSINGS
◄- - -► – APPROACH BEING CROSSED

FIGURE E1

NO-BUILD PEDESTRIAN TRAFFIC

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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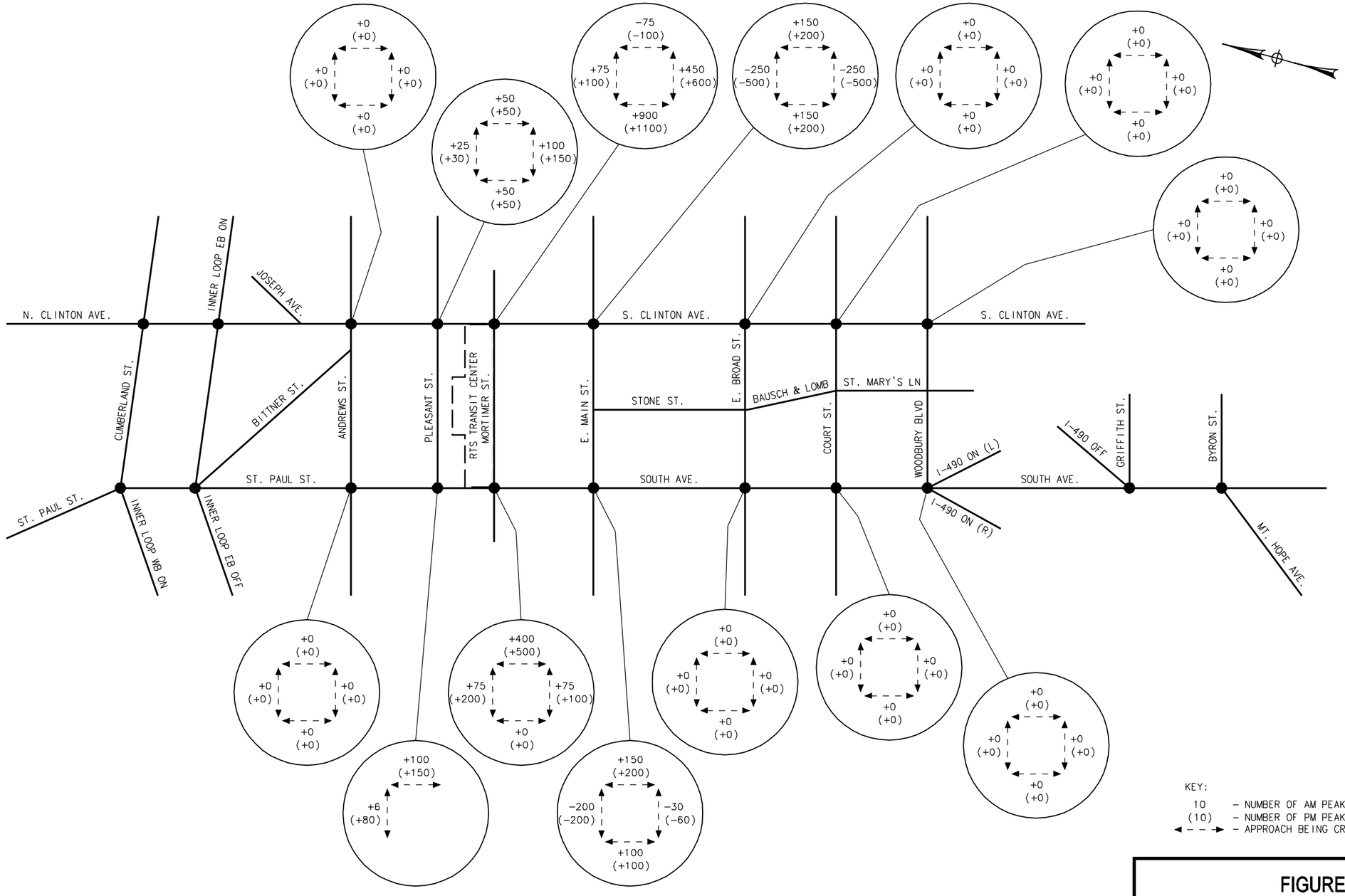

KEY:

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(10) – NUMBER OF PM PEAK HOUR PEDESTRIAN CROSSINGS
◄- - -► – APPROACH BEING CROSSED

FIGURE E2

PEDESTRIAN TRAFFIC REDISTRIBUTION

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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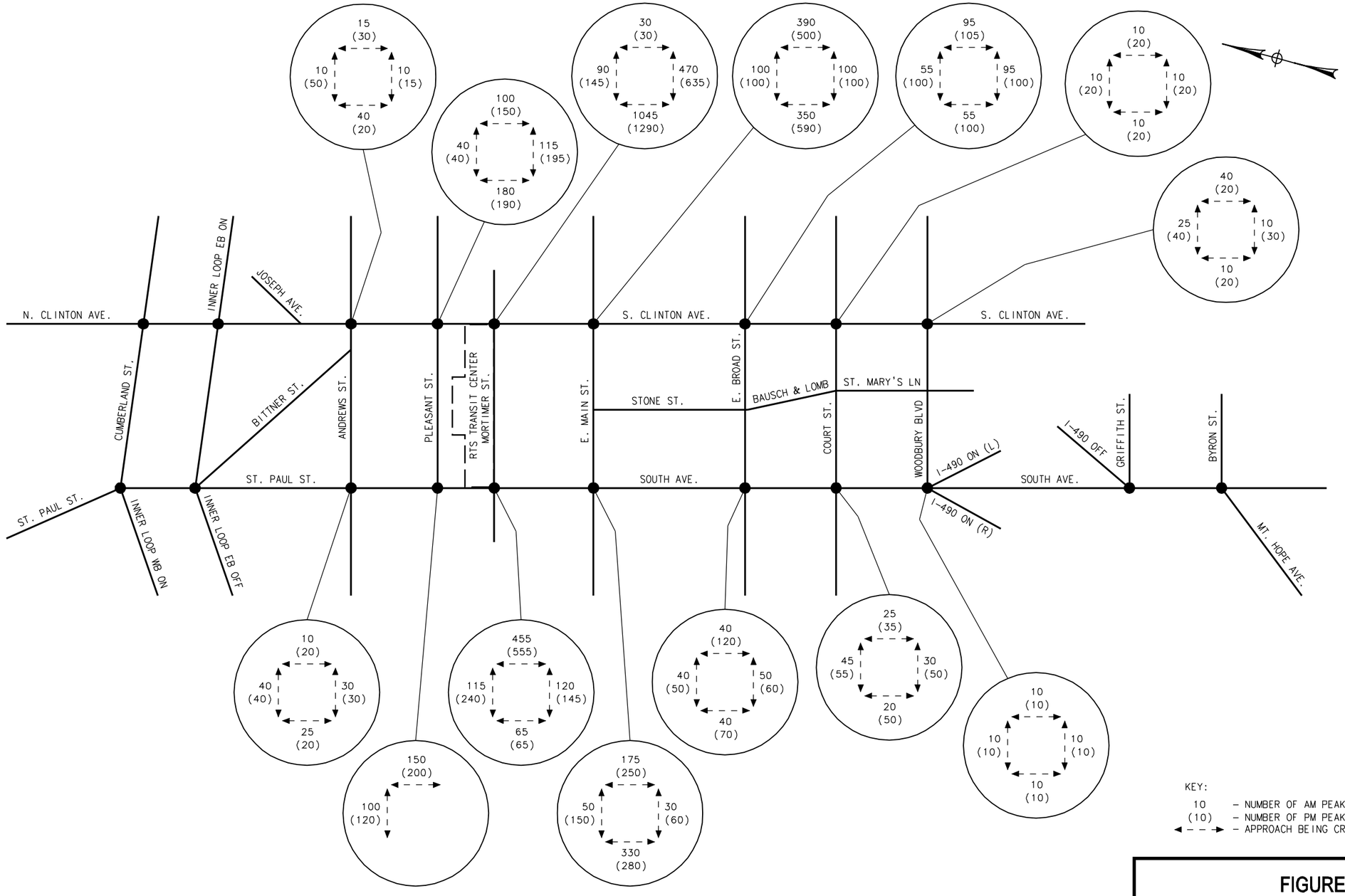

KEY:

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(10) – NUMBER OF PM PEAK HOUR PEDESTRIAN CROSSINGS
◄- - -► – APPROACH BEING CROSSED

FIGURE E3

FUTURE TWO-WAY CONVERSION
PEDESTRIAN TRAFFIC

TWO-WAY CONVERSION STUDY
NORTH/SOUTH CLINTON AVENUE &
ST. PAUL STREET/SOUTH AVENUE
CITY OF ROCHESTER, NEW YORK

DATE: JAN 5, 2012

SCALE: NONE

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